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**Supplementary material of: “Earliest bison dispersal in Western Palearctic: insights from the  
*Eobison* record from Pietrafitta (Early Pleistocene, Central Italy)”**

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**Supplementary Table 1.** List of *Bison (Eobison) degiulii* specimens from Pietrafitta.

<b>ID</b>	<b>Element</b>
SABAP UMB 130142	Astragalus
SABAP UMB 21. 4.1151	Astragalus
SABAP UMB 21. 4.1187	Astragalus
SABAP UMB 21. 4.1240	Astragalus
SABAP UMB 21. 4.1241	Astragalus
SABAP UMB 21. 4.1242	Astragalus
SABAP UMB 21. 4.1243	Astragalus
SABAP UMB 21. 4.1244	Astragalus
SABAP UMB 21. 4.1331	Astragalus
SABAP UMB 21. 4.1332	Astragalus
SABAP UMB 21. 4.1359	Astragalus
SABAP UMB 20.1.6802/1	Atlas
SABAP UMB 21. 4.1314	Atlas
SABAP UMB 20. 1.6802/4	Basioccipital
SABAP UMB 20. 1.6803/2	Basioccipital
SABAP UMB 130028	Calcaneum
SABAP UMB 21. 4.1150	Calcaneum
SABAP UMB 21. 4.1152	Calcaneum
SABAP UMB 21. 4.1257	Calcaneum
SABAP UMB 21. 4.1324	Calcaneum
SABAP UMB 21. 4.1340	Calcaneum
SABAP UMB 21. 4.1368	Calcaneum
SABAP UMB 21. 4.1369	Calcaneum
SABAP UMB 22.4.244	Calcaneum
SABAP UMB 22. 4.247/1	Calcaneum
SABAP UMB 21. 4.1219	Carpal-Tarsal indet.
SABAP UMB 21. 4.1220	Carpal-Tarsal indet.
SABAP UMB 21. 4.1264	Carpal-Tarsal indet.
SABAP UMB 21. 4.1308	Carpal-Tarsal indet.
SABAP UMB 21. 4.1309	Carpal-Tarsal indet.
SABAP UMB 21. 4.1313	Carpal-Tarsal indet.
SABAP UMB 21. 4.1334	Carpal-Tarsal indet.
SABAP UMB 21. 4.1335	Carpal-Tarsal indet.
SABAP UMB 21. 4.1267	Caudal vertebra
SABAP UMB 21. 4.1268	Caudal vertebra
SABAP UMB 21. 4.1269	Caudal vertebra
SABAP UMB 21. 4.1270	Caudal vertebra
SABAP UMB 21. 4.1271	Caudal vertebra
SABAP UMB 21. 4.1272	Caudal vertebra
SABAP UMB 21. 4.1273	Caudal vertebra
SABAP UMB 21. 4.1445	Caudal vertebra
SABAP UMB 21. 4.1164	Cervical vertebra

SABAP UMB 21. 4.1165	Cervical vertebra
SABAP UMB 19. 2.1178	Cranium
SABAP UMB 19. 2.1179	Cranium
SABAP UMB 21. 4.1153	Cubonavicular
SABAP UMB 21. 4.1162	Cubonavicular
SABAP UMB 21. 4.1166	Cubonavicular
SABAP UMB 21. 4.1188	Cubonavicular
SABAP UMB 21. 4.1245	Cubonavicular
SABAP UMB 21. 4.1247	Cubonavicular
SABAP UMB 21. 4.1296	Cubonavicular
SABAP UMB 21. 4.1333	Cubonavicular
SABAP UMB 21. 4.1389	Cubonavicular
SABAP UMB 21. 4.1209	Cuneiform
SABAP UMB 21. 4.1246	Cuneiform
SABAP UMB 21. 4.1258	Cuneiform
SABAP UMB 21. 4.1297	Cuneiform
SABAP UMB 21. 4.1390	Cuneiform
SABAP UMB 21. 4.1410	Cuneiform
SABAP UMB 21. 4.1411	Cuneiform
SABAP UMB 21. 4.1412	Cuneiform
SABAP UMB 21. 4.1413	Cuneiform
SABAP UMB 20. 1.6808/5	Distal phalanx
SABAP UMB 20. 1.6808/6	Distal phalanx
SABAP UMB 21. 4.1174	Distal phalanx
SABAP UMB 21. 4.1253	Distal phalanx
SABAP UMB 21. 4.1254	Distal phalanx
SABAP UMB 21. 4.1256	Distal phalanx
SABAP UMB 21. 4.1354	Distal phalanx
SABAP UMB 21. 4.1355	Distal phalanx
SABAP UMB 21. 4.1356	Distal phalanx
SABAP UMB 21. 4.1357	Distal phalanx
SABAP UMB 21. 4.1358	Distal phalanx
SABAP UMB 21. 4.1216	Distal Sesamoid
SABAP UMB 21. 4.1217	Distal Sesamoid
SABAP UMB 21. 4.1218	Distal Sesamoid
SABAP UMB 21. 4.1281	Distal Sesamoid
SABAP UMB 21. 4.1304	Distal Sesamoid
SABAP UMB 21. 4.1305	Distal Sesamoid
SABAP UMB 21. 4.1432	Distal Sesamoid
SABAP UMB 21. 4.1433	Distal Sesamoid
SABAP UMB 21. 4.1453	Distal Sesamoid
SABAP UMB 21. 4.1140	Femur
SABAP UMB 21. 4.1146	Femur
SABAP UMB 21. 4.1147	Femur
SABAP UMB 21. 4.1149	Femur

SABAP UMB 21. 4.1191	Femur
SABAP UMB 21. 4.1226	Femur
SABAP UMB 21. 4.1237	Femur
SABAP UMB 21. 4.1315	Femur
SABAP UMB 21. 4.1377	Femur
SABAP UMB 21. 4.1378	Femur
SABAP UMB 22. 4.247/5	Femur
SABAP UMB 22. 4.247/6	Femur
SABAP UMB 20. 1.6802/6	Fragments
SABAP UMB 20. 1.6802/7	Fragments
SABAP UMB 20. 1.6803/4	Fragments
SABAP UMB 21. 4.1169	Fragments
SABAP UMB 21. 4.1294	Fragments
SABAP UMB 21. 4.1457	Fragments
SABAP UMB 130074	Hemimandible
SABAP UMB 1.30075	Hemimandible
SABAP UMB 20. 1.6805/1	Hemimandible
SABAP UMB 20. 1.6805/2	Hemimandible
SABAP UMB 20. 1.6809	Hemimandible
SABAP UMB 20. 1.7339	Hemimandible
SABAP UMB 20. 1.7340	Hemimandible
SABAP UMB 20. 1.7341	Hemimandible
SABAP UMB 20. 1.7342	Hemimandible
SABAP UMB 21. 4.1168	Hemimandible
SABAP UMB 21. 4.1224	Hemimandible
SABAP UMB 21. 4.1235	Hemimandible
SABAP UMB 21. 4.1236	Hemimandible
SABAP UMB 21. 4.1298	Hemimandible
SABAP UMB 21. 4.1327	Hemimandible
SABAP UMB 21. 4.1376	Hemimandible
SABAP UMB 19. 2.1177	Hemipelvis
SABAP UMB 21. 4.1136	Hemipelvis
SABAP UMB 21. 4.1138	Hemipelvis
SABAP UMB 20. 1.6802/5	Horn-core
SABAP UMB 20. 1.6803/1	Horn-core
SABAP UMB 20. 1.7345	Horn-core
SABAP UMB 21. 4.1179	Horn-core
SABAP UMB 21. 4.1222	Horn-core
SABAP UMB 21. 4.1323	Horn-core
SABAP UMB 21. 4.1139	Humerus
SABAP UMB 21. 4.1142	Humerus
SABAP UMB 21. 4.1144	Humerus
SABAP UMB 21. 4.1319	Humerus
SABAP UMB 21. 4.1336	Humerus
SABAP UMB 21. 4.1337	Humerus

SABAP UMB 21. 4.1338	Humerus
SABAP UMB 21. 4.1374	Humerus
SABAP UMB 21. 4.1440	Humerus
SABAP UMB 22. 4.247/2	Humerus
SABAP UMB 22. 4.247/3	Humerus
SABAP UMB 20.1.7343	Incisor
SABAP UMB 20. 1.7368	Incisor
SABAP UMB 20. 1.7369	Incisor
SABAP UMB 20. 1.7370	Incisor
SABAP UMB 21. 4.1214	Incisor
SABAP UMB 21. 4.1447	Incisor
SABAP UMB 21. 4.1448	Incisor
SABAP UMB 21. 4.1449	Incisor
SABAP UMB 21. 4.1414	Fragments
SABAP UMB 20. 1.6808/3	Intermediate phalanx
SABAP UMB 20. 1.6808/4	Intermediate phalanx
SABAP UMB 21. 4.1159	Intermediate phalanx
SABAP UMB 21. 4.1160	Intermediate phalanx
SABAP UMB 21. 4.1161	Intermediate phalanx
SABAP UMB 21. 4.1204	Intermediate phalanx
SABAP UMB 21. 4.1205	Intermediate phalanx
SABAP UMB 21. 4.1206	Intermediate phalanx
SABAP UMB 21. 4.1207	Intermediate phalanx
SABAP UMB 21. 4.1208	Intermediate phalanx
SABAP UMB 21. 4.1251	Intermediate phalanx
SABAP UMB 21. 4.1252	Intermediate phalanx
SABAP UMB 21. 4.1255	Intermediate phalanx
SABAP UMB 21. 4.1274	Intermediate phalanx
SABAP UMB 21. 4.1275	Intermediate phalanx
SABAP UMB 21. 4.1276	Intermediate phalanx
SABAP UMB 21. 4.1317	Intermediate phalanx
SABAP UMB 21. 4.1349	Intermediate phalanx
SABAP UMB 21. 4.1350	Intermediate phalanx
SABAP UMB 21. 4.1351	Intermediate phalanx
SABAP UMB 21. 4.1352	Intermediate phalanx
SABAP UMB 21. 4.1353	Intermediate phalanx
SABAP UMB 21. 4.1442	Intermediate phalanx
SABAP UMB 22. 4.246	Intermediate phalanx
SABAP UMB 20. 1.7367	Lower molar
SABAP UMB 20. 1.6802/11	M1
SABAP UMB 20. 1.6804/5	M1
SABAP UMB 20. 1.6804/6	M1
SABAP UMB 20. 1.7350	M1
SABAP UMB 21. 4.1326	M1
SABAP UMB 20. 1.7352	M1/M2

SABAP UMB 21. 4.1231	m1/m2
SABAP UMB 20. 1.6802/10	M2
SABAP UMB 20. 1.6804/3	M2
SABAP UMB 20. 1.6804/4	M2
SABAP UMB 20. 1.7346/2	M2
SABAP UMB 20. 1.7348	M2
SABAP UMB 20. 1.7349	M2
SABAP UMB 20. 1.7362	m2
SABAP UMB 20. 1.7363	m2
SABAP UMB 20. 1.7364	m2
SABAP UMB 20. 1.7365	m2
SABAP UMB 21. 4.1229	M2
SABAP UMB 21. 4.1325	M2
SABAP UMB 21. 4.1446	M2
SABAP UMB 21. 4.1228	m1/m2
SABAP UMB 20. 1.6802/8	M3
SABAP UMB 20. 1.6802/9	M3
SABAP UMB 20. 1.6804/1	M3
SABAP UMB 20. 1.6804/2	M3
SABAP UMB 20. 1.6806	M3
SABAP UMB 20. 1.7346/1	M3
SABAP UMB 20. 1.7347	M3
SABAP UMB 21. 4.1227	m3
SABAP UMB 21. 4.1239	m3
SABAP UMB 21. 4.1383	Magnum
SABAP UMB 21. 4.1388	Magnum
SABAP UMB 22. 4.247/4	Magnum
SABAP UMB 21. 4.1421	Magnum
SABAP UMB 21. 4.1423	Magnum
SABAP UMB 21. 4.1424	Magnum
SABAP UMB 21. 4.1290	Malleolus
SABAP UMB 21. 4.1396	Malleolus
SABAP UMB 21. 4.1397	Malleolus
SABAP UMB 21. 4.1398	Malleolus
SABAP UMB 21. 4.1399	Malleolus
SABAP UMB 21. 4.1400	Malleolus
SABAP UMB 21. 4.1459	Malleolus
SABAP UMB 130038	Metacarpal
SABAP UMB 20. 1.7324	Metacarpal
SABAP UMB 20. 1.7325	Metacarpal
SABAP UMB 20. 1.7326	Metacarpal
SABAP UMB 20. 1.7327	Metacarpal
SABAP UMB 20. 1.7329/1	Metacarpal
SABAP UMB 22. 4.247/7	Metacarpal
SABAP UMB 22. 4.247/8	Metacarpal

SABAP UMB 21. 4.1163	Metapodial
SABAP UMB 21. 4.1238	Metapodial
SABAP UMB 21. 4.1320	Metapodial
SABAP UMB 21. 4.1360	Metapodial
SABAP UMB 21. 4.1361	Metapodial
SABAP UMB 21. 4.1362	Metapodial
SABAP UMB 21. 4.1363	Metapodial
SABAP UMB 21. 4.1364	Metapodial
SABAP UMB 21. 4.1365	Metapodial
SABAP UMB 21. 4.1366	Metapodial
SABAP UMB 21. 4.1367	Metapodial
SABAP UMB 21. 4.1403	Metapodial
SABAP UMB 20. 1.7328	Metatarsal
SABAP UMB 20. 1.7330	Metatarsal
SABAP UMB 20. 1.7331	Metatarsal
SABAP UMB 20. 1.7332	Metatarsal
SABAP UMB 20. 1.7333	Metatarsal
SABAP UMB 20. 1.7334	Metatarsal
SABAP UMB 20. 1.7335	Metatarsal
SABAP UMB 20. 1.7336	Metatarsal
SABAP UMB 20. 1.7337	Metatarsal
SABAP UMB 20. 1.7338	Metatarsal
SABAP UMB 21. 4.1189	Metatarsal
SABAP UMB 21. 4.1215	Metatarsal
SABAP UMB 22. 4.247/15	Metatarsal
SABAP UMB 21. 4.1451	Molar
SABAP UMB 20. 1.6802/3	Nasals
SABAP UMB 21. 4.1177	Occipital
SABAP UMB 20. 1.6802/16	Frontal fragment
SABAP UMB 20. 1.6802/15	P2
SABAP UMB 20. 1.7361	P2
SABAP UMB 21. 4.1450	p2
SABAP UMB 21. 4.1452	P2
SABAP UMB 20. 1.6802/13	P3
SABAP UMB 20. 1.6802/14	P3
SABAP UMB 20. 1.7354	P3
SABAP UMB 20. 1.7356	P3
SABAP UMB 20. 1.7357	P3
SABAP UMB 20. 1.7358	P3
SABAP UMB 20. 1.7359	P3
SABAP UMB 20. 1.7366	p3
SABAP UMB 20. 1.6802/12	P4
SABAP UMB 20. 1.6804/7	P4
SABAP UMB 20. 1.6804/8	P4
SABAP UMB 20. 1.7351	P4

SABAP UMB 20. 1.7353	P4
SABAP UMB 21. 4.1230	P4
SABAP UMB 21. 4.1265	Patella
SABAP UMB 21. 4.1266	Patella
SABAP UMB 20. 1.6803/3	Petrosal bone
SABAP UMB 21. 4.1373	Petrosal bone
SABAP UMB 21. 4.1234	Phalanx indet.
SABAP UMB 21. 4.1292	Phalanx indet.
SABAP UMB 21. 4.1306	Phalanx indet.
SABAP UMB 21. 4.1311	Phalanx indet.
SABAP UMB 21. 4.1370	Phalanx indet.
SABAP UMB 21. 4.1402	Phalanx indet.
SABAP UMB 21. 4.1443	Phalanx indet.
SABAP UMB 21. 4.1291	Pisiform
SABAP UMB 21. 4.1393	Pisiform
SABAP UMB 21. 4.1394	Pisiform
SABAP UMB 21. 4.1395	Pisiform
SABAP UMB 21. 4.1431	Pisiform
SABAP UMB 20. 1.6802/2	Premaxilla and maxilla
SABAP UMB 20. 1.6808/1	Proximal phalanx
SABAP UMB 20. 1.6808/2	Proximal phalanx
SABAP UMB 21. 4.1154	Proximal phalanx
SABAP UMB 21. 4.1155	Proximal phalanx
SABAP UMB 21. 4.1156	Proximal phalanx
SABAP UMB 21. 4.1157	Proximal phalanx
SABAP UMB 21. 4.1158	Proximal phalanx
SABAP UMB 21. 4.1199	Proximal phalanx
SABAP UMB 21. 4.1200	Proximal phalanx
SABAP UMB 21. 4.1201	Proximal phalanx
SABAP UMB 21. 4.1202	Proximal phalanx
SABAP UMB 21. 4.1203	Proximal phalanx
SABAP UMB 21. 4.1223	Proximal Phalanx
SABAP UMB 21. 4.1249	Proximal phalanx
SABAP UMB 21. 4.1250	Proximal phalanx
SABAP UMB 21. 4.1316	Proximal phalanx
SABAP UMB 21. 4.1342	Proximal phalanx
SABAP UMB 21. 4.1343	Proximal phalanx
SABAP UMB 21. 4.1344	Proximal phalanx
SABAP UMB 21. 4.1345	Proximal phalanx
SABAP UMB 21. 4.1346	Proximal phalanx
SABAP UMB 21. 4.1347	Proximal phalanx
SABAP UMB 21. 4.1348	Proximal phalanx
SABAP UMB 21. 4.1371	Proximal phalanx
SABAP UMB 21. 4.1372	Proximal phalanx
SABAP UMB 21. 4.1444	Proximal phalanx

SABAP UMB 22. 4.245	Proximal phalanx
SABAP UMB 20. 1.7329/2	Pyramidal
SABAP UMB 21. 4.1287	Pyramidal
SABAP UMB 21. 4.1300	Pyramidal
SABAP UMB 21. 4.1301	Pyramidal
SABAP UMB 21. 4.1318	Pyramidal
SABAP UMB 21. 4.1379	Pyramidal
SABAP UMB 21. 4.1384	Pyramidal
SABAP UMB 21. 4.1406	Pyramidal
SABAP UMB 21. 4.1430	Pyramidal
SABAP UMB 22. 4.247/9	Radius-ulna
SABAP UMB 22. 4.247/10	Radius-ulna
SABAP UMB 21. 4.1137	Radius-ulna
SABAP UMB 21. 4.1143	Radius-ulna
SABAP UMB 21. 4.1141	Radius
SABAP UMB 21. 4.1176	Radius
SABAP UMB 21. 4.1322	Radius
SABAP UMB 21. 4.1341	Radius
SABAP UMB 21. 4.1422	Radius
SABAP UMB 21. 4.1299	Rib
SABAP UMB 21. 4.1375	Rib
SABAP UMB 21. 4.1170	Ribs
SABAP UMB 21. 4.1171	Ribs
SABAP UMB 21. 4.1180	Ribs
SABAP UMB 20. 1.7344	Root fragments
SABAP UMB 21. 4.1285	Scaphoid
SABAP UMB 21. 4.1303	Scaphoid
SABAP UMB 21. 4.1381	Scaphoid
SABAP UMB 21. 4.1386	Scaphoid
SABAP UMB 21. 4.1391	Scaphoid
SABAP UMB 21. 4.1401	Scaphoid
SABAP UMB 21. 4.1415	Scaphoid
SABAP UMB 21. 4.1429	Scaphoid
SABAP UMB 21. 4.1441	Scaphoid
SABAP UMB 22. 4.247/11	Scapula
SABAP UMB 22. 4.247/12	Scapula
SABAP UMB 21. 4.1286	Semilunar
SABAP UMB 21. 4.1302	Semilunar
SABAP UMB 21. 4.1380	Semilunar
SABAP UMB 21. 4.1385	Semilunar
SABAP UMB 21. 4.1392	Semilunar
SABAP UMB 21. 4.1407	Semilunar
SABAP UMB 21. 4.1408	Semilunar
SABAP UMB 21. 4.1409	Semilunar
SABAP UMB 21. 4.1427	Semilunar

SABAP UMB 21. 4.1428	Semilunar
SABAP UMB 21. 4.1210	Sesamoid
SABAP UMB 21. 4.1211	Sesamoid
SABAP UMB 21. 4.1212	Sesamoid
SABAP UMB 21. 4.1213	Sesamoid
SABAP UMB 21. 4.1259	Sesamoid
SABAP UMB 21. 4.1261	Sesamoid
SABAP UMB 21. 4.1262	Sesamoid
SABAP UMB 21. 4.1277	Sesamoid
SABAP UMB 21. 4.1278	Sesamoid
SABAP UMB 21. 4.1284	Sesamoid
SABAP UMB 21. 4.1310	Sesamoid
SABAP UMB 21. 4.1312	Sesamoid
SABAP UMB 21. 4.1434	Sesamoid
SABAP UMB 21. 4.1435	Sesamoid
SABAP UMB 21. 4.1436	Sesamoid
SABAP UMB 21. 4.1437	Sesamoid
SABAP UMB 21. 4.1438	Sesamoid
SABAP UMB 21. 4.1454	Sesamoid
SABAP UMB 21. 4.1263	Small cuneiform
SABAP UMB 21. 4.1282	Small cuneiform
SABAP UMB 21. 4.1456	Small cuneiform
SABAP UMB 21. 4.1283	Tarsal
SABAP UMB 21. 4.1330	Tooth fragment
SABAP UMB 21. 4.1145	Tibia
SABAP UMB 21. 4.1148	Tibia
SABAP UMB 21. 4.1190	Tibia
SABAP UMB 21. 4.1197	Tibia
SABAP UMB 21. 4.1198	Tibia
SABAP UMB 21. 4.1339	Tibia
SABAP UMB 22. 4.247/13	Tibia
SABAP UMB 22. 4.247/14	Tibia
SABAP UMB 21. 4.1329	Ulna
SABAP UMB 21. 4.1288	Unciform
SABAP UMB 21. 4.1289	Unciform
SABAP UMB 21. 4.1382	Unciform
SABAP UMB 21. 4.1387	Unciform
SABAP UMB 21. 4.1404	Unciform
SABAP UMB 21. 4.1405	Unciform
SABAP UMB 21. 4.1425	Unciform
SABAP UMB 21. 4.1426	Unciform
SABAP UMB 21. 4.1232	Upper molar
SABAP UMB 21. 4.1233	Upper premolar
SABAP UMB 21. 4.1172	Vertebra
SABAP UMB 21. 4.1173	Vertebra

SABAP UMB 21. 4.1175	Vertebra
SABAP UMB 21. 4.1181	Vertebra
SABAP UMB 21. 4.1182	Vertebra
SABAP UMB 21. 4.1183	Vertebra
SABAP UMB 21. 4.1184	Vertebra
SABAP UMB 21. 4.1185	Vertebra
SABAP UMB 21. 4.1186	Vertebra
SABAP UMB 21. 4.1192	Vertebra
SABAP UMB 21. 4.1193	Vertebra
SABAP UMB 21. 4.1194	Vertebra
SABAP UMB 21. 4.1195	Vertebra
SABAP UMB 21. 4.1196	Vertebra
SABAP UMB 21. 4.1221	Vertebra
SABAP UMB 21. 4.1248	Vertebra
SABAP UMB 21. 4.1260	Vertebra
SABAP UMB 21. 4.1293	Vertebra
SABAP UMB 21. 4.1295	Vertebra
SABAP UMB 21. 4.1321	Vertebra
SABAP UMB 21. 4.1328	Vertebra
SABAP UMB 21. 4.1416	Vertebra
SABAP UMB 21. 4.1417	Vertebra
SABAP UMB 21. 4.1418	Vertebra
SABAP UMB 21. 4.1419	Vertebra
SABAP UMB 21. 4.1439	Vertebra
SABAP UMB 21. 4.1458	Vertebra
SABAP UMB 21. 4.1279	Vestigial metatarsal
SABAP UMB 21. 4.1280	Vestigial metatarsal
SABAP UMB 21. 4.1455	Vestigial metatarsal

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**Supplementary Table 2.** Abbreviations of the measurements shown in Fig. S1.

Measurement	Abbreviations
Anterior articular facet width (atlas)	AAW
Abaxial hemicondyle thickness (metapodials)	ABETl
Abaxial hemicondyle thickness (metapodials)	ABETm
Axial hemicondyle thickness (metapodials)	AETm
Articular surface length	AL
Width of anterior processes (basioccipital)	APW
Articular surface thickness	AT
Distance between bregma and akrocranion (temporo-parietal)	BAW
Body length (calcaneum)	BLB
Minimum length (calcaneum)	BLmin
Body minimum height (calcaneum)	CBHmin
Body minimum width (calcaneum)	CBWmin
<i>Capitis femoris</i> thickness (femur)	CFT
<i>Capitis femoris</i> width (femur)	CFW
<i>Collum scapulae</i> length (scapulae)	CSL
Condylar width (occipital)	CW
Distal diaphysis thickness (metapodials)	DDT
Distal diaphysis width (metapodials)	DDW
Distal end articular thickness (limb bones)	DEAT
Distal end articular width (limb bones)	DEAW
Distal end thickness (limb bones)	DET
Distal end thickness of the lateral trochlear crest (metapodials and femur)	DETL
Distal end thickness of the medial trochlear crest (metapodials and femur)	DETM
Distal end width (limb bones)	DEW
Diaphysis thickness at midshaft (limb bones)	DT
Diaphysis minimum thickness (limb bones)	DTmin
Distal trochlear width (astragalus)	DTW
Diaphysis width at midshaft (limb bones)	DW
Diaphysis minimum width (limb bones)	DWmin
Distance from supraorbital foramen to akrocranion (frontals)	FFLmin
Maximum distance between the supraorbital foramina (frontals)	FFW
Length from Nasion to akrocranion (frontals)	FLmax
Frontal length from Nasion to Bregma (frontals)	FLmin
Foramen magnum height (occipital)	FMH
Foramen magnum width (occipital)	FMW
Width of the postorbital constriction (frontals)	FWmin
Glenoid cavity length (scapula)	GL
Glenoid cavity maximum length (scapula)	Gmax
Glenoid process length (scapulae)	GPL
Great trochanter thickness (femur)	GTT
Glenoid cavity width (femur)	GW
Height	H
Dorsoventral diameter at the base (horn)	HAP

Distance between the anterior margins of the bases (horn)	HBWmax
Distance between the posterior margins of the bases (horn)	HBWmin
Anteroposterior diameter at the base (horn)	HDV
Chord length following the maximum curve (horn)	HLmax
Distance from the base to the tip (horn)	HLmin
Maximum height (calcaneum)	Hmax
Distance between the horncore anterior margin and the orbit (frontals)	HOD
Angle between the mid-line of the horncore and the sagittal of the skull (cranium)	HS°
Intertemporal bridge height (occipital)	IBH
Intertemporal bridge width (occipital)	IBW
Left	L
Lateral length (astragalus)	Ll
Medial length (astragalus)	Lm
Maximum length	Lmax
Minimum length (astragalus)	Lmin
Height of the corpus at the first molar (mandible)	M1H
Height of the corpus at the third molar (mandible)	M3H
Malleolar facet length (tibia)	MFL
Malleolar facet width (tibia)	MFW
Molar row length (mandible)	MRL
Mastoid width (occipital)	MW
Cubo-navicular articular facet length (calcaneum)	NCFL
Occipital squama maximum height (occipital)	OSHmax
Occipital squama minimum height (occipital)	OSHmin
Olecranon fossa width (humerus)	OW
Height of the corpus at the second premolar (mandible)	P2H
Posterior articular facet width (atlas)	PAW
Proximal end articular thickness (limb bones)	PEAT
Proximal end articular width (limb bones)	PEAW
Proximal end thickness (limb bones)	PET
Proximal end width (limb bones)	PEW
Proximo-lateral facet oblique diameter (metatarsal)	PFOl
Próximo-medial facet oblique diameter (metatarsal)	PFOm
Proximo-lateral articular facet width (metacarpal)	PFWl
Proximo-medial facet width (metacarpal)	PFWm
Width of posterior processes (basioccipital)	PPW
Premolar row length (mandible)	PRL
Proximal trochlear width (astragalus)	PTW
Postcornual width (temporo-occipital)	PW
Right	R
Width of the rotula articulation	RAW
Oblique length of the sole (distal phalanx)	SOL
<i>Sustentaculum tali</i> height (calcaneum)	STH
<i>Sustentaculum tali</i> thickness (calcaneum)	STT
Thickness	T
<i>Tuber calcanei</i> height (calcaneum)	TCaH
Trochlea crest height (humerus)	TCrH

<i>Tuber calcanei</i> width (calcaneum)	TCW
Lateral trochlear height (humerus)	THl
Medial trochlear height (humerus)	THm
Lateral thickness (astragalus)	Tl
Medial thickness (astragalus)	Tm
Length of the teeth row (mandible)	TRL
Trochlea thickness of the lateral epicondyle (humerus)	TTl
Trochlea thickness of the medial epicondyle (humerus)	TTm
Intertrochlear width (astragalus)	TTW
Trochlear lateral articulation width (humerus)	TWl
Trochlear medial articulation width (humerus)	TWm
Maximum width	Wmax
Minimum width	Wmin

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**Supplementary Table 3.** Measurements (mm) of the teeth of *Bison (Eobison) degiulii* from Pietrafitta.

Estimated measurements are in italics. Abbreviations as in Fig. S1 and Table S2.

<b>ID Specimen</b>	<b>Tooth</b>	<b>Side</b>	<b>L</b>	<b>W</b>
SABAP UMB 20. 1.6802/15	P2	R	16.6	14.1
SABAP UMB 20. 1.7361	P2	L	16.1	14.0
SABAP UMB 21. 4.1452	P2	R	18.6	13.3
SABAP UMB 20.1. 6802/13	P3	R	18.1	16.7
SABAP UMB 20.1. 6802/14	P3	L	16.7	21.7
SABAP UMB 20. 1.7354	P3	L	17.8	<i>14.1</i>
SABAP UMB 20. 1.7356	P3	R	19.8	<i>14.4</i>
SABAP UMB 20. 1.7357	P3	R	18.4	16.2
SABAP UMB 20. 1.7358	P3	L	16.8	19.8
SABAP UMB 20. 1.7359	P3	R	16.3	20.1
SABAP UMB 20.1. 6802/12	P4	R	17.3	20.3
SABAP UMB 20. 1.6804/7	P4	R	17.7	22.8
SABAP UMB 20. 1.6804/8	P4	L	17.2	23.6
SABAP UMB 20. 1.7351	P4	L	17.8	22.2
SABAP UMB 20. 1.7353	P4	?	-	-
SABAP UMB 21. 4.1230	P4	R	16.4	20.6
SABAP UMB 20. 1.6802/11	M1	R	22.9	24.8
SABAP UMB 20. 1.6804/5	M1	L	24.4	26.9
SABAP UMB 20. 1.6804/6	M1	R	24.3	26.5
SABAP UMB 20. 1.7350	M1	R	22.7	24.5
SABAP UMB 21. 4.1326	M1	R	27	25.5
SABAP UMB 20. 1.6802/10	M2	L	26.1	25.7
SABAP UMB 20. 1.6804/3	M2	R	27.4	27.1
SABAP UMB 20. 1.6804/4	M2	L	27.5	27.6
SABAP UMB 20. 1.7346/2	M2	R	25.0	25.6
SABAP UMB 20. 1.7348	M2	R	27.5	25.8
SABAP UMB 20. 1.7349	M2	L	28.0	26.3
SABAP UMB 21. 4.1229	M2	R	28.2	25.0
SABAP UMB 21. 4.1325	M2	R	27.6	26.0
SABAP UMB 21. 4.1446	M2	R	28.6	29.0
SABAP UMB 20. 1.6802/8	M3	R	28.4	26.3
SABAP UMB 20. 1.6802/9	M3	L	30.0	25.8
SABAP UMB 20. 1.6804/1	M3	L	29.1	28.8
SABAP UMB 20. 1.6804/2	M3	R	29.0	28.5
SABAP UMB 20. 1.6806	M3	L	27.6	27.0
SABAP UMB 20. 1.7346/1	M3	R	26.7	25.1
SABAP UMB 20. 1.7347	M3	L	26.0	27.3
SABAP UMB 20. 1.6805/2a	p2	L	12.1	8.4
SABAP UMB 20. 1.6805/1a	p2	R	13.1	8.3
SABAP UMB 20. 1.6809/1	p2	L	12.2	
SABAP UMB 20. 1.7340/1	p2	R	11.1	8.0
SABAP UMB 20. 1.7341/1	p2	R	13.0	9.0

SABAP UMB 20. 1.7342/1	p2	L	12.3	8.7
SABAP UMB 130074/1	p2	R	13.0	8.3
SABAP UMB 21. 4.1450	p2	L	12.0	8.5
SABAP UMB 20. 1.7362	p3	L	23.0	11.8
SABAP UMB 20. 1.6805/2b	p3	L	19.5	11.4
SABAP UMB 20. 1.6805/1b	p3	R	19.5	12.2
SABAP UMB 20. 1.6809/2	p3	L	18.5	11.0
SABAP UMB 20. 1.7340/2	p3	R	15.7	9.8
SABAP UMB 20. 1.7341/2	p3	R	18.9	11.3
SABAP UMB 20. 1.7342/2	p3	L	17.5	11.1
SABAP UMB 130074/2	p3	R	19.3	11.0
SABAP UMB 21. 4.1235/1	p3	R	19.5	10.3
SABAP UMB 20. 1.6805/1c	p4	R	20.9	12.6
SABAP UMB 20. 1.7339/1	p4	R	21.4	12.6
SABAP UMB 20. 1.6809/3	p4	L	24.6	12.1
SABAP UMB 20. 1.7340/3	p4	R	18.0	12.3
SABAP UMB 20. 1.7341/3	p4	R	21.4	12.0
SABAP UMB 20. 1.7342/3	p4	L	20.5	11.7
SABAP UMB 130074/3	p4	R	21.9	12.5
SABAP UMB 1.30075/1	p4	L	21.7	13.2
SABAP UMB 21. 4.1235/2	p4	R	22.9	11.6
SABAP UMB 21. 4.1236/1	p4	R	20.5	11.6
SABAP UMB 20. 1.6805/2c	m1	L	21.2	15.5
SABAP UMB 20. 1.6805/1d	m1	R	20.8	15.7
SABAP UMB 20. 1.7339/2	m1	R	23.0	15.3
SABAP UMB 20. 1.7341/4	m1	R	21.8	15.5
SABAP UMB 20. 1.7342/4	m1	L	22.5	15.5
SABAP UMB 130074/4	m1	R	22.9	15.3
SABAP UMB 1.30075/1	m1	L	22.9	16.3
SABAP UMB 21. 4.1236/2	m1	R	22.9	14.3
SABAP UMB 21. 4.1231	m1/m2	R	26.8	16.4
SABAP UMB 20. 1.7362	m2	L	27.2	17.7
SABAP UMB 20. 1.7363	m2	L	27.1	16.2
SABAP UMB 20. 1.7364	m2	L	23.4	15.2
SABAP UMB 20. 1.7363	m2	L	27.4	16.0
SABAP UMB 20. 1.6805/2d	m2	L	25.9	18.9
SABAP UMB 20. 1.6805/1e	m2	R	27.1	17.2
SABAP UMB 20. 1.7339/3	m2	R	27.0	16.6
SABAP UMB 20. 1.6809/5	m2	L	24.8	15.3
SABAP UMB 20. 1.7340/4	m2	R	23.5	16.0
SABAP UMB 20. 1.7341/5	m2	R	26.1	17.0
SABAP UMB 20. 1.7342/5	m2	L	25.8	16.0
SABAP UMB 130074/5	m2	R	27.2	16.3
SABAP UMB 1.30075/1	m2	L	28.3	16.7
SABAP UMB 21. 4.1236/3	m2	R	25.0	14.7
SABAP UMB 21. 4.1228	m2/m1	R?	-	20.2
SABAP UMB 20. 1.6805/2e	m3	L	37.8	18.8

SABAP UMB 20. 1.6805/1f	m3	R	37.6	17.4
SABAP UMB 20. 1.7339/4	m3	R	36.6	16.5
SABAP UMB 20. 1.7340/5	m3	R	38.3	16.1
SABAP UMB 20. 1.7341/6	m3	R	37.2	16.2
SABAP UMB 20. 1.7342/6	m3	L	36.3	16.2
SABAP UMB 130074/6	m3	R	38.4	15.3
SABAP UMB 1.30075/	m3	L	39.2	16.3
SABAP UMB 21. 4.1227	m3	R	37.4	16.4
SABAP UMB 21. 4.1239	m3	R	36.6	15.5

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**Supplementary Table 4.** Comparative dental measurements (mm) of M1, M2, M3, and m3 in selected *Leptobos* and *Bison* s.l. samples. Abbreviations as in Fig. S1 and Table S2. Data taken from: <sup>a</sup>Duvernois and Guérin (1989); <sup>b</sup>Bukshianidze (2005); <sup>c</sup>Moyà Solà (1987); <sup>d</sup>this work; <sup>e</sup>Masini (1989); <sup>f</sup>Kostopoulos et al. (2018); <sup>g</sup>Asperen and Kahlke (2017); <sup>h</sup>Brugal (1995); <sup>i</sup>Moullé (1992); <sup>j</sup>Sorbelli et al. (2021a); <sup>k</sup>Vasiliev (2008).

Taxon	Locality	Statistics	LM1	WM1	LM2	WM2	LM3	WM3	Lm3	Wm3
<i>Leptobos merlai</i> <sup>a</sup>	St. Vallier (France)	Mean (N)	19.5 (4)	23.4 (4)	24.0 (4)	25.6 (4)	27.0 (4)	24.9 (4)	38.3 (2)	17.5 (2)
		Min-Max	18.0–20.5	21.0–25.5	22.0–26.0	24.5–28.0	25.5–29.0	24.0–26.5	37.5-39	17.5-17.5
		SD	1.08	1.88	1.63	1.60	1.58	1.18	1.1	
<i>Leptobos etruscus</i> <sup>a</sup>	Senèze, Upper Valdarno (France, Italy)	Mean (N)	19.9 (26)	23.2 (29)	25.1 (30)	23.5 (30)	29.2 (27)	23.5 (27)	39 (56)	16.3 (56)
		Min-Max	17.0–23.0	17.5–27.0	20.0–28.0	16.0–28.5	25.0–34.0	17–28.0	34.5-45	13-19.5
		SD	1.6	1.9	2.3	3.1	2.3	2.6	2.1	1.4
<i>B. (Eobison) georgicus</i> <sup>b</sup>	Dmanisi (Georgia)	Mean (N)	23 (4)	25.4 (4)	27.2	26.0	30.1	27.4	39.5	13.9
		Min-Max	20.3-28.8	24.2-26	25.3-29	25-27.3	27.8-31.3	27.1-28.9	37.9-42.4	13-15.1
		SD	3.4	3.3	1.9	1.0	1.7	0.5	42.4	15.1
<i>B. (Eobison) sp.</i> <sup>c</sup>	Venta Micena (Spain)	Mean (N)	25.9 (11)	20.9 (11)	28.7 (9)	25.9 (11)	29.7 (10)	21.8 (9)	38.9 (14)	15.6 (15)
		Min-Max	22.8-27.2	19.3-23.0	26.2-30.9	22.8-27.2	27.4-32.3	21-23.3	37.3-42.4	13.9-17.5
		SD	1.34	1.7	1.6	1.3	1.9	1.3	1.5	0.9
<i>B. (Eobison) degiulii</i> <sup>d</sup>	Pietrafitta (Italy)	Mean (N)	24.3 (5)	25.6 (5)	27.3 (9)	26.5 (9)	28.1 (7)	27 (7)	37.6 (10)	16.5 (10)
		Min-Max	22.7-27.0	24.5-26.9	25-28.6	25.0-29.0	26.0-30.0	25.1-28.8	36.3-39.2	15.3-18.8
		SD	1,7	1,0	1,1	1,4	1,4	1,4	0,9	1
<i>B. (Eobison) degiulii</i> <sup>e</sup>	Pirro (Italy)	Mean (N)	20.4 (7)	23.3 (7)	23.3 (6)	24.7 (6)	26.2 (10)	23.5 (10)	34.3 (1)	15.0 (1)
		Min-Max	19.6-22.2	21.0-26.0	22.0-26.0	23.9-25.3	23.0-28.4	21.2-25.5		
		SD	1.0	1.5	1.5	0.6	1.9	1.1		
<i>B. (Eobison) degiulii</i> <sup>f</sup>	Mygdonia Basin (Greece)	Mean (N)	26.2 (18)	24.2 (18)	29.8 (22)	24.9 (22)	30.8 (22)	23.9 (22)	40 (10)	17 (10)
		Min-Max	22.0-33.9	19.3-28.0	25-35.9	19.5-29.6	27.9-33	18-29.1	37.1-45.1	15.1-18.1
		SD	4.0	2.7	2.5	3.3	1.3	3.3	2.4	0.9
<i>B. (Eobison) cf. degiulii</i> <sup>d</sup>	Capena (Italy)	Mean (N)	23.2 (2)	25.3 (1)	26.7 (2)	22.3 (1)	28.6 (2)	21.8 (1)	39.5 (1)	16.4 (1)
		Min-Max	22.7-23.6				28.3-28.9		39.5	16.4
		SD	0.6				0.4			
<i>B. (Poephagus) menneri</i> <sup>g</sup>	Untermassfeld (Germany)	Mean (N)	26.9 (16)	20.7 (16)	31.2 (17)	20.6 (17)	31.7 (13)	21 (13)	41.4 (20)	15.9 (22)
		Min-Max	22.7-30.6	17.0-25.2	27.7-35.0	17-26.3	30.2-34.3	16.8-23.8	38-45.3	13.2-18.7
		SD	3.1	2.9	1.9	3.2	1.2	2.1	2.1	1.7

<i>B. (Bison) schoetensacki</i> <sup>g, h, i, j</sup>	Durfort, Le Vallonnet,	<b>Mean (N)</b>	28.4 (54)	23 (44)	31.1 (63)	23.6 (54)	32.7 (58)	25.1 (50)	42.6 (52)	17.9 (52)
	Süssenborn, Isernia, Vallparadís	<b>Min-Max</b>	20.6-34.5	16.5-29.2	23.3-35.7	17.5-30.5	23.5-40.3	18.4-31.5	37.8-49.8	14.7-21
	(France, Germany, Italy, Spain)	<b>SD</b>	3.4	3.3	2.6	3.0	2.8	2.8	2.4	1.5
<i>B. (Bison) priscus priscus</i> <sup>g</sup>	Taubach	<b>Mean (N)</b>	33 (15)	23.3 (15)	35.9 (14)	25.5 (14)	38.1 (4)	24.2 (4)	48.6 (18)	18.8 (19)
	(Germany)	<b>Min-Max</b>	30.2-35.3	21.1-28.2	33.8-38.3	22.3-29.6	36.1-40.0	20.7-26.5	44.0-53.7	16.0-21.5
		<b>SD</b>	1.5	2.1	1.4	2.4	1.7	2.6	3.1	2.9
<i>B. (Bison) priscus priscus</i> <sup>k</sup>	Krasny Yar, R–W	<b>Mean (N)</b>	25.3 (10)	27.5 (10)	31.2 (11)	28.1 (9)	33.1 (8)	28.2 (6)	46.8 (58)	19.9 (68)
	(Russia)	<b>Min-Max</b>	20.5-32	24.7-33.0	26.5-34.7	23.0-31.0	29.0-37.0	24.0-30.5	42-53.5	16-22.5

**Supplementary Table 5.** Measurements (mm) of the hemimandibles of *Bison (Eobison) degiulii* from Pietrafitta. Abbreviations as in Fig. S1 and Table S2.

ID Specimen	Side	TRL	MRL	PRL	P2H	M1H	M3H
SABAP UMB 20. 1.6805/2	L	145.0	89.2	55.2	-	59.6	46
SABAP UMB 20. 1.6805/1	R	142.6	89.1	53.4	74.2	-	43.6
SABAP UMB 20. 1.7339	R	-	86.0	-	61.9	52.0	-
SABAP UMB 20. 1.6809	L	-	-	55.7	-	41.0	33.2
SABAP UMB 20. 1.7340	R	132.1	88.8	45.6	-	47.0	35.8
SABAP UMB 20. 1.7341	R	144.8	88.7	55.3	65.2	52.0	41.4
SABAP UMB 20. 1.7342	L	139.5	86.6	53.4	70.0	52.0	38.1
SABAP UMB 130074	R	148.0	94.7	52.6	73.4	56.7	-
SABAP UMB 130075	L	-	94.2	-	66.1	50.0	-

**Supplementary Table 6.** Principal component analysis of crania using six selected variables (see Section 3 in the main text and Fig. 9). Eigenvalue and % variance of the PCs and coefficients of each variable for each PC are shown. Abbreviations as Table 1.

	PC 1	PC 2	PC 3	PC 4	PC 5	PC 6
<b>Eigenvalue</b>	0.01975	0.003426	0.002557	0.001933	0.001403	6.53E-20
<b>% Variance</b>	67.943	11.785	8.7981	6.6487	4.8249	2.25E-16
<b>msIBW</b>	0.84355	-0.24305	0.048119	-0.056924	-0.239	0.40825
<b>msCW</b>	-0.014523	0.022855	0.5209	0.40254	0.63184	0.40825
<b>msFMW</b>	-0.35892	-0.72025	-0.42201	0.059933	0.063753	0.40825
<b>msMW</b>	0.078591	0.55012	-0.59037	-0.22958	0.35111	0.40825
<b>msOSHmax</b>	-0.23781	0.3415	-0.0035191	0.52965	-0.61613	0.40825
<b>msPPW</b>	-0.31089	0.048821	0.44688	-0.70562	-0.19156	0.40825

**Supplementary Table 7.** Measurements (mm) of the atlas of *Bison (Eobison) degiulii* from Pietrafitta. Abbreviations as in Fig. S1 and Table S2.

ID Specimen	Wmax	Lmax	PAW	AAW	H
SABAP UMB 20. 1.6802/1	182.9	126.4	107.1	112.4	-
SABAP UMB 21. 4.1314	-	-	-	-	95.6

**Supplementary Table 8.** Measurements (mm) of the scapulae of *Bison (Eobison) degiulii* from Pietrafitta. Abbreviations as in Fig. S1 and Table S2.

ID Specimen	Side	GL	GLmax	GW	CSL
SABAP UMB 22. 4.247/11	L	75.3	85.0	60.5	65.0
SABAP UMB 22. 4.247/12	S	79.30	90.80	61.1	68.7

**Supplementary Table 9.** Measurements (mm) of the humeri of *Bison (Eobison) degiulii* from Pietrafitta. Abbreviations as in Fig. S1 and Table S2.

<b>ID Specimen</b>	<b>Side</b>	<b>Lmax</b>	<b>DEW</b>	<b>DEAW</b>	<b>OW</b>	<b>TWm</b>	<b>TWI</b>	<b>DET</b>	<b>TTm</b>	<b>TTI</b>	<b>THm</b>	<b>TCH</b>	<b>THI</b>
SABAP UMB 21. 4.1139	R	-	92.5	86.2	34.1	56.6	28.8	-	-	-	55.5	47.5	37.6
SABAP UMB 21. 4.1144	L	-	101.7	89.5	34.9	62.8	27.7	81.0	-	-	49.2	49.6	39.0
SABAP UMB 21. 4.1336	R	-	-	82.9	-	55.8	27.7	-	-	-	50.2	47	37.6
SABAP UMB 21. 4.1337	L	-	-	74.6	-	50.9	25.3	-	-	-	47.2	42.8	33.5
SABAP UMB 21. 4.1338	R	-	-	75.5	-	47.2	23.9	-	-	-	55.5	46.9	-
SABAP UMB 22. 4.247/2	R	365.0	95.3	84.3	33.3	56.0	25.4	93.1	91.7	61.0	51.7	46.5	36.1

**Supplementary Table 10.** Comparative measurements (mm) of the humerus in selected *Leptobos* and *Bison* s.l. samples. Abbreviations as in Fig. S1 and Table S2. Data taken from: <sup>a</sup>Masini (1989); <sup>b</sup>Rodrigo (2011); <sup>c</sup>Bukshianidze (2005); <sup>d</sup>this work; <sup>e</sup>Sher (1997); <sup>f</sup>Moullé (1992); <sup>g</sup>Sala (1986); <sup>h</sup>Sorbelli et al. (2021a); <sup>i</sup>Vasiliev (2008).

<b>Taxon</b>	<b>Locality</b>	<b>Statistics</b>	<b>DEW</b>	<b>DEAW</b>	<b>TWm</b>	<b>TTm</b>	<b>TTI</b>	<b>THm</b>
<i>Leptobos gr. LSEM</i> <sup>a, b</sup>	Les Étouaires, St. Vallier	<b>Mean</b>	76.9 (16)	70.8 (6)	48.2 (6)	76.7 (14)	54.1 (6)	46.7 (17)
	Montopoli, Villarroya	<b>Min-Max</b>	65.0-89.9	65.7-77.0	45.0-51.3	67.7-85.3	47.6-61.3	41.0-52.2
	(France, Italy, Spain)	<b>SD</b>	8.2	4.8	2.6	6.4	5.8	4.1
<i>Leptobos etruscus</i> <sup>a, b</sup>	Senèze, Matassino,	<b>Mean</b>	85.7 (21)	79.9 (17)	54.5 (17)	81.7 (20)	58.5 (16)	51.2 (22)
	Olivola, Fonelas-1	<b>Min-Max</b>	68.8-94.2	64.5-85.0	41.7-57.6	62.3-90.0	48.6-63.0	39.9-55.8
	(France, Italy, Spain)	<b>SD</b>	6.5	4.5	3.6	7.5	3.1	3.7
<i>Bison (Eobison) georgicus</i> <sup>c</sup>	Dmanisi	<b>Mean</b>	93.0 (4)	81.9 (4)	63.9 (4)	87.3 (4)	57.7 (3)	49.7 (4)
	(Georgia)	<b>Min-Max</b>	91.3-95.4	78.4-84.4	54.5-58.3	81.6-91.9	55.4-59.1	48.6-50.9
		<b>SD</b>	1.9	2.6	1.7	4.6	2.0	1.3
<i>Bison (Eobison) degiulii</i> <sup>d</sup>	Pietrafitta	<b>Mean</b>	96.5 (3)	82.2 (6)	54.9 (6)	91.7 (1)	61.0 (1)	51.6 (5)
	(Italy)	<b>Min-Max</b>	92.5-101.7	74.6-89.5	47.2-62.8	-	-	47.2-55.5
		<b>SD</b>	4.7	5.9	5.3	-	-	3.4
<i>Bison (Eobison) degiulii</i> <sup>a</sup>	Pirro Nord	<b>Mean</b>	81.3 (5)	80.7 (3)	62.1 (1)	-	29.8 (2)	50.8 (2)
	(Italy)	<b>Min-Max</b>	74.1-91.6	74.5-92.0	53.7-70.5	-	-	43.7-57.9
		<b>SD</b>	7.4	9.8	11.9	-	-	10.0
<i>B. (Eobison) degiulii</i> <sup>d</sup>	Mygdonia Basin	<b>Mean</b>	103.2 (6)	93.9 (7)	62.2 (6)	99.4 (6)	69.7 (6)	58.3 (6)
	(Greece)	<b>Min-Max</b>	95.6-116.6	80.6-101.4	59.9-64.2	92.5-103.9	66.0-73.2	50.5-67.0
		<b>SD</b>	7.2	7.2	1.4	4.7	3.0	5.4
<i>B. (Poephagus) menneri</i> <sup>e</sup>	Untermassfeld (Germany)	<b>Mean</b>	104.1 (24)	94.8 (30)	-	-	-	60.1 (28)
		<b>Min-Max</b>	90.0-120.0	85.0-104.5	-	-	-	52.0-68.0
		<b>SD</b>	8.6	6.0	-	-	-	4.6
<i>B. (Bison) schoetensacki</i> <sup>f, g, h</sup>	Le Vallonnet, Isernia,	<b>Mean</b>	-	102.6 (25)	65.8 (5)	105.7 (1)	68.6 (2)	58.3 (5)
	Vallparadís,	<b>Min-Max</b>	-	87.9-113.0	60.5-72.0	-	65.2-72.0	52.0-70.0
	(France, Italy, Spain)	<b>SD</b>	-	6.9	4.7	-	4.8	6.9
<i>B. (Bison) priscus priscus</i> <sup>i</sup>	Krasny Yar, R–W	<b>Mean</b>	119.7 (60)	108.9 (69)	-	118.1 (62)	-	68.0 (73)
	(Russia)	<b>Min-Max</b>	43.0-69.0	94.0-124.5	-	102.3-132.0	-	59.0-76.7

**Supplementary Table 11.** Measurements (mm) of the radii of *Bison (Eobison) degiulii* from Pietrafitta. Estimated measurements are in italics. Abbreviations as in Fig. S1 and Table S2.

<b>ID Specimen</b>	<b>Side</b>	<b>Lmax</b>	<b>PEW</b>	<b>PEAW</b>	<b>PET</b>	<b>PEAT</b>	<b>DWmin</b>	<b>DW</b>	<b>DTmin</b>	<b>DT</b>	<b>DEW</b>	<b>DEAW</b>	<b>DET</b>	<b>DEAT</b>
SABAP UMB 21. 4.1137	R	317.5	91.2	86.1	50.4	43.6	50.2	53.6	30.5	33.0	91.6	83.2	56.7	-
SABAP UMB 21. 4.1143	L	<i>325.0</i>	<i>94.0</i>	-	51.0	45.2	-	-	-	-	-	-	-	-
SABAP UMB 21. 4.1141	R	-	86.5	81.5	47.4	42.0	50.0	51.5	30.0	32.8	-	-	-	-
SABAP UMB 21. 4.1176	L	-	<i>82.9</i>	<i>66.9</i>	-	-	-	-	-	-	86.9	74.4	-	-
SABAP UMB 22. 4.247/9	R	330.0	85.4	79.8	48.0	43.0	50.2	51.4	29.3	32.0	84.5	77.0	58.0	49.1
SABAP UMB 22. 4.247/10	L	330.0	89.2	80.9	48.9	42.5	55.1	58.2	30.2	31.8	78.9	75.8	56.0	55.0

**Supplementary Table 12.** Comparative measurements (mm) of the radius of selected *Leptobos* and *Bison* s.l. samples. Abbreviations as in Fig. S1 and Table S2. Data taken from: <sup>a</sup>Masini (1989); <sup>b</sup>Rodrigo (2011); <sup>c</sup>Tong et al., 2016; <sup>d</sup>Bukshianidze (2005); <sup>e</sup>Moyà-Solà (1987); <sup>f</sup>this work; <sup>g</sup>Sher (1997); <sup>h</sup>Brugal (1995); <sup>i</sup>Moullé (1992); <sup>j</sup>Sorbelli et al. (2021a); <sup>k</sup>Prat et al. (2003); <sup>l</sup>Vercontère and Guerin (2010); <sup>m</sup>Sala (1986); <sup>n</sup>Castaños (2017); <sup>o</sup>Croitot (2010); <sup>p</sup>Empel and Roskoz (1963).

<b>Taxon</b>	<b>Locality</b>	<b>Statistics</b>	<b>Lmax</b>	<b>PEW</b>	<b>PEAW</b>	<b>PET</b>	<b>PEAT</b>	<b>DW</b>	<b>DEW</b>	<b>DET</b>
<i>Leptobos</i> gr. LSEM <sup>a, b</sup>	Les Étouaires, St. Vallier	<b>Mean (N)</b>	311.4 (19)	77.0 (19)	72.0 (19)	41.6 (13)	39.0 (8)	45.0 (15)	73.6 (17)	50.2 (15)
	Montopoli, Villarroya (France, Italy, Spain)	<b>Min-Max</b>	288.0-326.0	68.5-86.5	63.7-78.1	36.2-47.7	34.0-44.5	38.4-50.0	64.0-81.5	40.3-60.0
		<b>SD</b>	12.0	5.7	5.4	3.5	4.1	4.1	4.8	5.5
<i>Leptobos etruscus</i> <sup>a, b</sup>	Senèze, Matassino, Olivola, Fonelas-1 (France, Italy, Spain)	<b>Mean (N)</b>	300.4 (9)	85.3 (20)	77.8 (18)	44.6 (19)	43.5 (9)	38.2 (13)	74.4 (15)	50.9 (13)
		<b>Min-Max</b>	260.2-319.0	77.2-92.6	70.0-83.2	37.0-48.0	39.2-48.0	24.4-54.0	62.1-84.7	38.8-62.2
		<b>SD</b>	20.2	4.5	3.8	3.2	3.1	11.9	6.6	6.9
<i>B. (Eobison) palaeosinensis</i> <sup>c</sup>	Nihowan Basin (China)	<b>Mean (N)</b>	335.0 (1)	91.8 (2)	83.1 (2)	-	-	-	92.0 (1)	-
		<b>Min-Max</b>	-	84.0-99.5	75.0-91.2	-	-	-	-	-
		<b>SD</b>	-	11.0	11.5	-	-	-	-	-
<i>B. (Eobison) georgicus</i> <sup>d</sup>	Dmanisi (Georgia)	<b>Mean (N)</b>	302.0 (2)	91.7 (3)	81.6 (3)	48.5 (3)	43.0 (3)	51.8 (3)	71.6 (3)	59.0 (3)
		<b>Min-Max</b>	300.0-304.0	90.1-93.3	79.8-82.6	47.6-49.6	40.7-44.3	50.7-52.7	51.8-82.9	56.9-62.9
		<b>SD</b>	2.8	1.6	1.5	1.0	2.0	1.0	17.2	3.4
<i>B. (Eobison) sp.</i> <sup>e</sup>	Venta Micena (Spain)	<b>Mean (N)</b>	277.0 (3)	71.6 (8)	-	37.2 (8)	-	42.2 (3)	63.3 (5)	43.0 (5)
		<b>Min-Max</b>	267.8-282.6	65.2-76.3	-	34.5-40.3	-	42.0-42.4	57.0-69.2	40.2-48.0
		<b>SD</b>	8.0	4.2	-	2.0	-	0.2	4.5	3.0
<i>B. (Eobison) degiulii</i> <sup>f</sup>	Pietrafitta (Italy)	<b>Mean (N)</b>	325.6 (4)	88.2 (6)	79 (5)	49.1 (5)	43.3 (5)	53.7 (4)	85.5 (4)	56.9 (3)
		<b>Min-Max</b>	317.5-330.0	82.9-94.0	66.9-86.1	47.4-51.0	42.0-45.2	51.4-58.2	78.9-91.6	56.0-58.0
		<b>SD</b>	5.9	4.1	7.2	1.5	1.2	3.2	5.3	1.0
<i>B. (Eobison) degiulii</i> <sup>f</sup>	Mygdonia Basin (Greece)	<b>Mean (N)</b>	335 (4)	87.6 (7)	80.6 (7)	48.4 (7)	43.4 (6)	48.2 (6)	80.4 (5)	53.4 (5)
		<b>Min-Max</b>	318.0-357.0	85.0-91.2	76.3-84.6	43.6-51.0	41.3-46.8	44.2-53.7	76.5-85.2	50.3-56.0
		<b>SD</b>	17.3	2.0	3.0	2.7	2.2	3.5	3.2	2.6
<i>B. (Eobison) cf. degiulii</i> <sup>f</sup>	Capena (Italy)	<b>Mean (N)</b>	327.6 (1)	92.9 (1)	-	-	-	54.8 (1)	86.8 (1)	-
<i>B. (Poephagus) menneri</i> <sup>g</sup>	Untermassfeld (Germany)	<b>Mean (N)</b>	384.5 (13)	104.3 (24)	94.9 (24)	-	49.1 (24)	57.6 (17)	98.8 (13)	-
		<b>Min-Max</b>	350.0-418.0	91.5-118.0	83.0-106.5	-	43.0-57.0	49.0-65.5	89.0-110.0	-
		<b>SD</b>	22.5	7.5	6.5	-	4.1	5.4	6.9	-

<i>B. (Bison) schoetensacki</i> <sup>h, i, j</sup>	Durfort, Le Vallonnet,	<b>Mean (N)</b>	372.6 (12)	105.2 (20)	96.3 (21)	54.0 (14)	48.9 (20)	60.4 (12)	97.8 (12)	62.5 (12)
	Mauer, Vallparadis	<b>Min-Max</b>	339.1-390.0	94.4-115.0	86.9-107	46.5-63.0	40.5-57.0	50.6-64.2	89-102.8	46.0-77.0
	(France, Germany, Italy)	<b>SD</b>	15.0	5.0	5.1	3.9	5.2	3.8	3.9	8.7
<i>B. (Bison) priscus</i> ssp. <sup>k, l, m, n, o</sup>	Habarra, Romain-La-Roche,	<b>Mean (N)</b>	370.2 (30)	111.9 (42)	103 (43)	66.1 (33)	51.0 (6)	60.7 (12)	98.4 (32)	71.4 (5)
	Cava Filo, Kiputz IX, Tiraspol	<b>Min-Max</b>	327.0-405.0	92.0-126.0	80.3-117.5	50.5-110.0	45.0-46.0	47.0-75.0	77.0-120.0	63.0-79.0
	(France, Italy, Spain, Ukraine)	<b>SD</b>	20.4	9.5	8.4	15.8	4.6	9.4	10.4	6.0
<i>B. (Bison) bonasus</i> <sup>p</sup>	Białowieża	<b>Mean (N)</b>	343.4 (36)	92.3 (36)	-	46.9 (36)	-	-	82.4 (36)	57.7
	(Poland)	<b>Min-Max</b>	291.0-392.0	80.0-111.0	-	42.0-54.0	-	-	71.0-100.0	47.0-72.0
		<b>SD</b>	21.8	8.2	-	3.3	-	-	7.8	5.9

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**Supplementary Table 13.** Measurements (mm) of the carpals and tarsals of *Bison (Eobison) degiulii* from Pietrafitta. Estimated measurements are in italics. Abbreviations as in Fig. S1 and Table S2.

ID Specimen	Element	Side	L	W	T
SABAP UMB 21. 4.1209	Cuneiform	L	15.6	25.3	41.7
SABAP UMB 21. 4.1246	Cuneiform	L	16.0	23.2	38.6
SABAP UMB 21. 4.1258	Cuneiform	R	<i>16.2</i>	23.2	-
SABAP UMB 21. 4.1297	Cuneiform	R	19.9	24.2	40.4
SABAP UMB 21. 4.1390	Cuneiform	L	16.5	24.3	40.8
SABAP UMB 21. 4.1410	Cuneiform	R	18.4	27.7	42.4
SABAP UMB 21. 4.1411	Cuneiform	R	16.5	26.5	42.9
SABAP UMB 21. 4.1412	Cuneiform	L	17.1	26.4	42.2
SABAP UMB 21. 4.1413	Cuneiform	L	19.0	22.9	39.6
SABAP UMB 21. 4.1209	Cuneiform	L	15.6	25.3	41.7
SABAP UMB 21. 4.1246	Cuneiform	L	16.0	23.2	38.6
SABAP UMB 21. 4.1258	Cuneiform	R	<i>16.2</i>	23.2	-
SABAP UMB 21. 4.1297	Cuneiform	R	19.9	24.2	40.4
SABAP UMB 21. 4.1383	Magnum	R	23.3	41.4	36.9
SABAP UMB 21. 4.1388	Magnum	R	25.8	38.1	38.8
SABAP UMB 21. 4.1421	Magnum	L	28.2	43.2	39.2
SABAP UMB 21. 4.1423	Magnum	L	24.5	44.2	38.6
SABAP UMB 21. 4.1424	Magnum	R	23.7	44.1	39.4
SABAP UMB 22. 4.247/4	Magnum	R	24.5	41.7	37.7
SABAP UMB 21. 4.1290	Malleolus	R	30.1	19.8	40.2
SABAP UMB 21. 4.1396	Malleolus	L	30.3	21.9	42.1
SABAP UMB 21. 4.1397	Malleolus	L	33.5	22.2	43.5
SABAP UMB 21. 4.1398	Malleolus	L	26.9	16.8	33.2
SABAP UMB 21. 4.1399	Malleolus	L	27.5	27.0	36.9
SABAP UMB 21. 4.1400	Malleolus	R	28.1	17.7	37.5
SABAP UMB 21. 4.1459	Malleolus	R	32.7	19.2	38.8
SABAP UMB 20. 1.7329/2	Pyramidal	L	50.5	26.7	43.8
SABAP UMB 21. 4.1287	Pyramidal	R	47.1	24.8	39.4
SABAP UMB 21. 4.1300	Pyramidal	L	-	24.4	39.5
SABAP UMB 21. 4.1301	Pyramidal	R	49.2	26.0	40.0
SABAP UMB 21. 4.1318	Pyramidal	R	43.7	24.3	38.7
SABAP UMB 21. 4.1379	Pyramidal	R	-	22.5	<i>34.9</i>
SABAP UMB 21. 4.1384	Pyramidal	R	49.0	23.7	40.0
SABAP UMB 21. 4.1406	Pyramidal	L	40.1	22.5	35.6
SABAP UMB 21. 4.1430	Pyramidal	R	-	19.8	-
SABAP UMB 21. 4.1285	Scaphoid	L	42.0	32.5	47.0
SABAP UMB 21. 4.1303	Scaphoid	R	37.0	33.2	48.3
SABAP UMB 21. 4.1381	Scaphoid	R	40.0	28.4	42.5
SABAP UMB 21. 4.1386	Scaphoid	R	-	30.0	-
SABAP UMB 21. 4.1391	Scaphoid	L	35.0	26.5	44.1
SABAP UMB 21. 4.1401	Scaphoid	R	36.5	30.6	46.5

SABAP UMB 21. 4.1429	Scaphoid	L	45.0	31.0	47.0
SABAP UMB 21. 4.1441	Scaphoid	R	38.7	34.5	51.4
SABAP UMB 21. 4.1286	Semilunar	R	34.5	36.0	40.7
SABAP UMB 21. 4.1302	Semilunar	L	35.8	32.2	48.8
SABAP UMB 21. 4.1380	Semilunar	R	36.1	39.81	42.4
SABAP UMB 21. 4.1385	Semilunar	R	32.5	28.0	39.0
SABAP UMB 21. 4.1392	Semilunar	L	31.4	33.9	39.9
SABAP UMB 21. 4.1407	Semilunar	R	33.3	31.5	42.0
SABAP UMB 21. 4.1408	Semilunar	R	35.6	31.9	43.2
SABAP UMB 21. 4.1409	Semilunar	L	-	32.0	-
SABAP UMB 21. 4.1427	Semilunar	L	35.2	35.7	44.7
SABAP UMB 21. 4.1428	Semilunar	R	34.8	35.5	43.3
SABAP UMB 21. 4.1288	Unciform	L	26.7	31.2	34.7
SABAP UMB 21. 4.1289	Unciform	R	26.9	30.4	34.4
SABAP UMB 21. 4.1382	Unciform	R	26.1	32.2	34.8
SABAP UMB 21. 4.1387	Unciform	R	24.9	30.2	35.5
SABAP UMB 21. 4.1404	Unciform	L	23.8	26.7	28.9
SABAP UMB 21. 4.1405	Unciform	R	27.9	32.9	32.5
SABAP UMB 21. 4.1425	Unciform	L	28.4	34.7	36.5
SABAP UMB 21. 4.1426	Unciform	R	28.5	34.4	37.2

**Supplementary Table 14.** Principal component analysis of metacarpals using seven selected variables (see Section 3 and Fig. 9). Eigenvalue and % variance of the PCs and coefficients of each variable for each PC are shown. Abbreviations as in Table 1.

	PC 1	PC 2	PC 3	PC 4	PC 5	PC 6	PC 7
<b>Eigenvalue</b>	0.00359497	0.000471576	0.000376779	0.000291477	0.000196987	0.00012557	8.11E-15
<b>% Variance</b>	71.084	9.3245	7.4501	5.7634	3.895	24.829	1.60E-11
<b>msLmax</b>	-0.8102	-0.19676	-0.16936	-0.20672	-0.30088	-0.0074193	0.37796
<b>msPET</b>	-0.062886	0.17589	0.83697	-0.15927	0.16086	0.2655	0.37796
<b>msPEW</b>	0.23734	0.2769	0.1089	0.038811	-0.41525	-0.73372	0.37796
<b>msDT</b>	-0.0088787	-0.43998	0.043104	0.7786	0.22862	-0.056019	0.37796
<b>msDW</b>	0.44846	-0.58928	-0.13709	-0.53008	0.093526	0.016061	0.37796
<b>msDETm</b>	-0.079196	0.46998	-0.39308	-0.10228	0.67467	-0.099135	0.37796
<b>msDEW</b>	0.27536	0.30325	-0.28943	0.18093	-0.44155	0.61473	0.37796

**Supplementary Table 15.** Measurements (mm) of the pelvis of *Bison (Eobison) degiulii* from Pietrafitta.

Abbreviations as in Table S2.

<b>ID Specimen</b>	<b>Side</b>	<b>Lmax</b>	<b>SB</b>	<b>SH</b>	<b>LFO</b>	<b>LA</b>	<b>LAR</b>
SABAP UMB 19. 2.1177	L	-	-	-	-	82.9	62.2
SABAP UMB 21. 4.1136	R	523.0	23.5	58.5	108.0	86.3	75.5
SABAP UMB 21. 4.1138	R	540.0	21.8	57.2	114.4	88.3	69.4

**Supplementary Table 16.** Measurements (mm) of the femurs of *Bison (Eobison) degiulii* from Pietrafitta. Estimated measurements are in italics. Abbreviations as in Fig. S1 and Table S2.

ID Specimen	Side	Lmax	Lm	PEW	CFW	CFT	GTT	DWmin	DTmin	DEW	DETm	DETI	RAW
SABAP UMB 21. 4.1140	R	<i>450.0</i>	<i>430.0</i>	-	56.6	53.6	-	-	-	-	-	-	57.0
SABAP UMB 21. 4.1146	R	-	-	-	-	-	-	-	-	-	130	-	51.9
SABAP UMB 21. 4.1147	R	455.0	435.0	145.8	58.0	58.3	83.4	44.3	54.7	114.5	140.3	113.0	59
SABAP UMB 21. 4.1149	L	457	425.0	139.0	55.7	58.2	85.4	50.9	50.8	-	-	113.1	59.2
SABAP UMB 21. 4.1315	L	-	-	-	52.5	52.9	-	-	-	-	-	-	-
SABAP UMB 21. 4.1377	R	-	-	-	-	49.9	-	-	-	-	-	-	-
SABAP UMB 21. 4.1378	R	-	-	-	52.0	50.0	-	-	-	-	-	-	-
SABAP UMB 21. 4.1191	L	-	-	-	-	-	-	-	-	-	-	-	57.0
SABAP UMB 22. 4.247/5	R	-	443.0	144.0	60.7	54.3	-	-	-	-	<i>139.3</i>	-	-
SABAP UMB 22. 4.247/6	L	461.0	437.0	133.6	60.6	54.0	-	-	-	100.0	139.2	113.0	60.0

**Supplementary Table 17.** Comparative measurements (mm) of the femur in selected *Leptobos* and *Bison* s.l. samples. Abbreviations as in Fig. S1 and Table S2. Data taken from: <sup>a</sup>Masini (1989); <sup>b</sup>Rodrigo (2011); <sup>c</sup>this work; <sup>d</sup>Sher (1997); <sup>e</sup>Vasiliev (2008); <sup>f</sup>Empel and Roskoz (1963).

Taxon	Locality	Statistics	Lmax	Lm	PEW	CFT	GTT	DWmin	DTmin	DEW	DETm
<i>Leptobos etruscus</i> <sup>a, b</sup>	Senèze, Olivola (France, Italy)	<b>Average (N)</b>	409.7 (3)	400.3 (3)	129.8 (3)	48.0 (3)	-	-	-	97.9 (7)	128.6 (6)
		<b>Min-Max</b>	381.5-424.5	376.0-415.0	118.5-139.0	44.5-50.5	-	-	-	83.5-108.0	119.5-141.0
		<b>SD</b>								9.8	9.2
<i>B. (Eobison) degiulii</i> <sup>c</sup>	Pietrafitta (Italy)	<b>Average (N)</b>	455.8 (4)	434.0 (5)	140.6 (4)	53.9 (8)	84.4 (2)	47.6 (2)	52.8 (2)	107.3 (2)	137.2 (4)
		<b>Min-Max</b>	450.0-461.0	425-443	133.6-145.8	49.9-58.3	83.4-85.4	44.3-50.9	50.8-54.7	100.0-114.5	130.0-140.3
		<b>SD</b>	4.6	6.9	5.5	3.2	1.4	4.7	2.8	10.3	4.8
<i>B. (Eobison) degiulii</i> <sup>a</sup>	Pirro Nord (Italy)	<b>Average (N)</b>	367.5 (1)	352 (1)	105.1 (2)	47.8 (2)	59.5 (2)	36.6 (2)	41.5 (2)	91.4 (2)	122.5 (2)
		<b>Min-Max</b>	-	-	104.6-105.5	47.5-48.0	58.9-60	34.6-38.5	38.5-44.5	88.0-94.7	121.0-123.9
		<b>SD</b>	-	-	0.6	0.4	0.8	2.8	4.2	4.7	2.1
<i>B. (Poephagus) menneri</i> <sup>d</sup>	Untermassfeld (Germany)	<b>Average (N)</b>	430.0 (1)	-	130.0 (1)	-	-	40 (1)	-	108.8 (5)	143.0 (4)
		<b>Min-Max</b>	-	-	-	-	-	-	-	99.0-118.0	135.0-154.0
		<b>SD</b>	-	-	-	-	-	-	-	7.9	9.1
<i>B. (Bison) priscus priscus</i> <sup>e</sup>	Krasny Yar, R–W	<b>Average (N)</b>	533.9 (8)	488.6 (11)	181.9 (10)	-	98.7 (8)	54.9 (22)	61.5 (21)	138.2 (16)	175.0 (6)

<i>B. (Bison) bonasus</i> <sup>f</sup>	(Russia)	<b>Min-Max</b>	504.0-564.0	450.0-515.0	163.5-199.0	-	83.0-111.5	47.0-60.0	56.0-67.0	120.0-154.0	168.5-182.8
	Białowieża	<b>Average (N)</b>	455.2 (32)	432.2 (32)	134.5 (31)	56.0 (32)	73.3 (31)	42.3 (32)	49.1 (32)	111.8 (32)	135.3 (32)
	(Poland)	<b>Min-Max</b>	404.0-515.0	386.0-487.0	119.0-156.0	50.0-64.0	60.0-89.0	36-48	41.0-58.0	100.0-133.0	122.0-155.0
		<b>SD</b>	30.4	27.1	11.0	3.7	7.7	3.7	4.4	8.7	8.7

**Supplementary Table 18.** Measurements (mm) of the tibiae of *Bison (Eobison) degiulii* from Pietrafitta. Estimated measurements are in italics. Abbreviations as in Fig. S1 and Table S2.

ID Specimen	Side	Lmax	PEW	PET	Dwmin	Dtmin	DEW	DEAW	DET	DEAT	MFW	MFT
SABAP UMB 19. 2.1176	L	<i>425.0</i>	115.8	122.7	47.2	38.9	74.8	67.6	58.4	50.2	14.0	34.0
SABAP UMB 21. 4.1145	L	<i>429.0</i>	127.5	115.0	46.9	39.2	71.6	62.1	58.0	50.9	16.3	33.5
SABAP UMB 21. 4.1148	R	-	-	108.0	-	-	-	-	-	-	-	-
SABAP UMB 21. 4.1339	R	-	-	-	-	-	71.0	60.0	-	-	14.2	33.8
SABAP UMB 21. 4.1190	R	-	123.6	-	45.4	38.7	74.4	63.1	56.1	44.1	16.5	34.8
SABAP UMB 22. 4.247/13	L	<i>430.0</i>	-	-	45.2	36.5	68.3	59.0	57.8	48.2	14.6	31.8
SABAP UMB 22. 4.247/14	R	-	110.8	-	-	-	-	-	-	-	-	-

**Supplementary Table 19.** Comparative measurements (mm) of the tibia in selected *Leptobos* and *Bison* s.l. samples. Abbreviations as in Fig. S1 and Table S2. Data taken from: <sup>a</sup>Masini (1989); <sup>b</sup>Rodrigo (2011); <sup>c</sup>Tong et al., 2016; <sup>d</sup>Bukshianidze (2005); <sup>e</sup>Moyà-Solà (1987); <sup>f</sup>this work; <sup>g</sup>Sher (1997); <sup>h</sup>Brugal (1995); <sup>i</sup>Moullé (1992); <sup>j</sup>Sala (1986); <sup>k</sup>Sorbelli et al. (2021a); <sup>l</sup>Prat et al. (2013); <sup>m</sup>Vercoutère and Guerin (2010); <sup>n</sup>Flerov (1976); <sup>o</sup>Castaños (2017); <sup>p</sup>Vasiliev (2008); <sup>q</sup>Empel and Roskoz (1963).

<b>Taxon</b>	<b>Locality</b>	<b>Statistics</b>	<b>Lmax</b>	<b>PEW</b>	<b>PET</b>	<b>Dwmin</b>	<b>Dtmin</b>	<b>DEW</b>	<b>DET</b>
<i>Leptobos</i> gr. LSEM <sup>a, b</sup>	St.-Vallier, Les Étouaires,	<b>Mean (N)</b>	-	-	-	41.4 (7)	33.0 (7)	62.8 (19)	53.1 (17)
	Pantalla, Villarroya	<b>Min-Max</b>	-	-	-	37.7-44.2	29.8-35.6	55.7-73.9	47.9-62.8
	(France, Italy, Spain)	<b>SD</b>	-	-	-	2.7	2.0	4.3	4.0
<i>Leptobos etruscus</i> <sup>a, b</sup>	Senèze, Olivola	<b>Mean (N)</b>	412.0 (2)	96.1 (11)	90.1 (5)	47.5 (13)	35.8 (14)	65.5 (23)	52.1 (22)
	(France, Italy)	<b>Min-Max</b>	407.0-417.0	79.0-118.0	75.0-100.0	45.1-51.1	29.3-41.0	56.2-71.6	44.7-58.4
		<b>SD</b>	7.1	11.4	9.7	2.0	3.1	4.2	4.0
<i>B. (Eobison) palaeosinensis</i> <sup>c</sup>	Nihowan Basin	<b>Mean (N)</b>	403.0 (4)	106.3 (4)	-	47.8 (4)	-	73.8 (4)	56.0 (4)
	(China)	<b>Min-Max</b>	346.0-446.0	98.0-120.0	-	45.0-51.0	-	70.0-78.0	53.0-58.0
		<b>SD</b>	42.1	10.5	-	3.2	-	3.9	2.4
<i>B. (Eobison) georgicus</i> <sup>d</sup>	Dmanisi	<b>Mean (N)</b>	-	-	-	-	-	71.2 (2)	55.2 (2)
	(Georgia)	<b>Min-Max</b>	-	-	-	-	-	70.2-72.3	54.7-55.6
		<b>SD</b>	-	-	-	-	-	1.6	0.6
<i>B. (Eobison) sp.</i> <sup>e</sup>	Venta Micena	<b>Mean (N)</b>	385.0 (2)	99.8 (2)	-	48.3 (2)	43.6 (2)	60.7 (4)	46.1 (4)
	(Spain)	<b>Min-Max</b>	366.0-404.0	93.6-106.0	-	44.6-52.0	37.2-50	60.0-62.2	41.2-51.7
		<b>SD</b>	26.9	8.8	-	5.2	9.1	1.0	4.4
<i>B. (Eobison) degiulii</i> <sup>f</sup>	Pietrafitta	<b>Mean (N)</b>	427.0 (2)	122.3 (3)	115.2 (3)	46.5 (3)	38.9 (3)	73.0 (4)	57.5 (3)
	(Italy)	<b>Min-Max</b>	425.0-429.0	115.8-127.5	108.0-122.7	45.4-47.2	38.7-39.2	71.0-74.8	56.1-58.4
		<b>SD</b>	2.8	6.0	7.4	1.0	0.3	1.9	1.2
<i>B. (Eobison) degiulii</i> <sup>a</sup>	Pirro Nord (Italy)	<b>Mean (N)</b>	351.0 (1)	96.5 (1)	90.0 (1)	48.2 (1)	36 (1)	79.0 (1)	50.9 (1)
<i>B. (Poephagus) menneri</i> <sup>g</sup>	Untermassfeld	<b>Mean (N)</b>	468.8 (4)	129.7 (3)	-	-	-	84.0 (25)	62.0 (23)
	(Germany)	<b>Min-Max</b>	439.0-505.0	122.0-142.0	-	-	-	74.0-94.0	55.0-67.0
		<b>SD</b>	29.2	8.8	-	-	-	5.4	3.8
<i>B. (Bison) schoetensacki</i> <sup>h, i, j, k</sup>	Durfort, Le Vallonnet,	<b>Mean (N)</b>	-	-	-	55.5 (12)	39.5 (6)	84.2 (23)	62.3 (23)
	Mauer, Isernia, Vallparadis	<b>Min-Max</b>	-	-	-	46.5-68.0	33.4-42.3	69.3-92.3	50.6-70.0
	(France, Germany, Italy, Spain)	<b>SD</b>	-	-	-	5.3	3.2	6.1	5.1

<i>B. (Bison) priscus</i> sspp. <sup>j, l, m, n, o</sup>	Habarra, Romain-La-Roche,	<b>Mean (N)</b>	448.2 (21)	133.7 (24)	129.0 (4)	55.6 (10)	-	85.0 (38)	63.4 (11)
	Taubach, Cava Filo, Kiputz IX	<b>Min-Max</b>	399.0-535.0	120.0-155.0	115.0-143.0	50.0-63.0	-	68.0-104.0	57.0-76.0
	(France, Germany, Italy, Spain)	<b>SD</b>	30.6	8.7	12.4	5.1	-	7.7	6.2
<i>B. (Bison) priscus priscus</i> <sup>p</sup>	Krasny Yar, R–W	<b>Mean (N)</b>	459.4 (16)	136.4 (16)	123.1 (14)	-	43.5 (70)	85.8 (92)	65.0 (87)
	(Russia)	<b>Min-Max</b>	430.0-496.0	122.0-150.0	110.5-134.5	-	36.3-54.5	73.0-98.2	56.5-75.4
<i>B. (Bison) bonasus</i> <sup>q</sup>	Białowieża	<b>Mean (N)</b>	403.0 (4)	106.3 (4)	-	47.8 (4)	-	73.8 (4)	56.0 (4)
	(Poland)	<b>Min-Max</b>	346.0-446.0	98.0-120.0	-	45.0-51.0	-	70.0-78.0	53.0-58.0
		<b>SD</b>	42.1	10.5	-	3.2	-	3.9	2.4

**Supplementary Table 20.** Measurements (mm) of cubonaviculars of *Bison (Eobison) degiulii* from Pietrafitta. Abbreviations as in Fig. S1 and Table S2.

ID Specimen	Side	L	W	T
SABAP UMB 21. 4.1245	L	-	66.8	51.4
SABAP UMB 21. 4.1247	R	-	64.1	56.6
SABAP UMB 21. 4.1296	R	40.2	62.44	58.3
SABAP UMB 21. 4.1333	R	-	59.1	47.6
SABAP UMB 21. 4.1389	L	-	62.0	50.0
SABAP UMB 21. 4.1153	L	45.9	66.3	61.7
SABAP UMB 21. 4.1162	R	-	-	-
SABAP UMB 21. 4.1166	R	48.5	68.3	62.7
SABAP UMB 21. 4.1188	L	42.0	67.6	60.0

**Supplementary Table 21.** Comparative measurements (mm) of the cubonavicular in selected *Leptobos* and *Bison* s.l. samples. Abbreviations as in Fig. S1 and Table S2. Data taken from: <sup>a</sup>Masini (1989); <sup>b</sup>Rodrigo (2011); <sup>c</sup>Moyà Solà (1987); <sup>d</sup>this work; <sup>e</sup>Sher (1997); <sup>f</sup>Brugal (1995); <sup>g</sup>Moullé (1992); <sup>h</sup>Sala (1986); <sup>i</sup>Sorbelli et al. (2021a); <sup>j</sup>Vasiliev (2008); <sup>k</sup>Empel and Roskoz (1963).

Taxon	Locality	Statistics	L	W	T
<i>Leptobos</i> gr. LSEM <sup>a, b</sup>	St.-Vallier, Les Étouaires, Montopoli, Villarroya (France, Italy, Spain)	<b>Average (N)</b>	37.3 (20)	60.6 (30)	57.4 (30)
		<b>Min-Max</b>	32.1-42.3	51.5-66.5	48.0-63.3
		<b>SD</b>	3.2	4.3	4.2
<i>Leptobos etruscus</i> <sup>a, b</sup>	Senèze, Olivola (France, Italy)	<b>Average (N)</b>	34.4 (6)	59.6 (23)	58.3 (23)
		<b>Min-Max</b>	30.1-39.3	52.5-67.3	48.8-66.4
		<b>SD</b>	3.6	4.5	5.9
<i>B. (Eobison) sp.</i> <sup>c</sup>	Venta Micena (Spain)	<b>Average (N)</b>	29.3 (5)	58.4 (5)	52.5 (5)
		<b>Min-Max</b>	24.5-34.9	52.6-65.1	48.4-57.7
		<b>SD</b>	4.0	5.2	4.7
<i>B. (Eobison) degiulii</i> <sup>d</sup>	Pietrafitta (Italy)	<b>Average (N)</b>	44.2 (4)	64.6 (8)	56 (8)
		<b>Min-Max</b>	40.2-48.5	59.1-68.3	47.6-62.7
		<b>SD</b>	3.8	3.2	5.7
<i>B (Poephagus) menneri</i> <sup>e</sup>	Untermassfeld (Germany)	<b>Average (N)</b>	52.7 (32)	72.9 (34)	67.4 (35)
		<b>Min-Max</b>	43.0-60.0	65.5-84.0	58.5-85.0
		<b>SD</b>	4.3	5.7	5.8
<i>B. (Bison) schoetensacki</i> <sup>f, g, h, i</sup>	Durfört, Le Vallonnet, Isernia, Vallparadís (France, Italy, Spain)	<b>Average (N)</b>	55.8 (5)	75.6 (14)	69,1 (16)
		<b>Min-Max</b>	45.0-58.8	66,7-84	60.7-78.0
		<b>SD</b>	8.4	4.8	4
<i>B. (Bison) priscus priscus</i> <sup>j</sup>	Krasny Yar, R–W (Russia)	<b>Average (N)</b>	-	80.5 (61)	76.3 (57)
		<b>Min-Max</b>	-	68.2-91.4	61.0-84.0
		<b>SD</b>	-	-	-
<i>B. (Bison) bonasus</i> <sup>k</sup>	Białowieża (Poland)	<b>Mean (N)</b>	48.9 (31)	66.4 (31)	62.2 (31)
		<b>Min-Max</b>	42.0-58.0	60.0-76.0	55.0-73.0
		<b>SD</b>	4.9	4.8	4.9

**Supplementary Table 22.** Measurements (mm) of the astragali of *Bison (Eobison) degiulii* from Pietrafitta.

Abbreviations as in Fig. S1 and Table S1.

ID Specimen	Side	LI	Lm	Lmin	TI	Tm	PTW	TTW	DTW
SABAP UMB 130142	R	80.4	-	72.9	42.9	44.5	50.0	-	51.9
SABAP UMB 21. 4.1151	L	77.1	60.5	72.0	43.0	44.8	51.6	43.2	51.5
SABAP UMB 21. 4.1187	L	75.5	59.5	69.5	44.7	44.9	47.7	45.6	53.2
SABAP UMB 21. 4.1240	L	64.9	51.0	60.3	34.8	35.7	40.6	38.1	42.1
SABAP UMB 21. 4.1241	L	-	-	72.0	-	43.7	-	-	49.9
SABAP UMB 21. 4.1242	R	76.7	61.7	72.4	42.0	45.4	42.7	44.5	49.2
SABAP UMB 21. 4.1243	L	78.5	60.1	71.8	45.0	45.5	50.5	48.9	52.5
SABAP UMB 21. 4.1244	L	76.5	61.6	74.8	43.0	45.6	47.0	44.0	48.0
SABAP UMB 21. 4.1331	R	77.1	60.6	70.8	44.8	45.4	47.7	46.6	51.6
SABAP UMB 21. 4.1332	R	70.8		65.0	40.0	40.5	43.0	42.9	46.0
SABAP UMB 21. 4.1359	R	67.8	53.2	63.0		38.2	46.0	43.0	47.1

**Supplementary Table 23.** Comparative measurements (mm) of the astragalus in selected *Leptobos* and *Bison* s.l. samples. Abbreviations as in Fig. S1 and Table S2. Data taken from: <sup>a</sup>Masini (1989); <sup>b</sup>Rodrigo (2011); <sup>c</sup>Tong et al. (2016); <sup>d</sup>Bukshianidze (2005); <sup>e</sup>Moyà-Solà (1987); <sup>f</sup>this work; <sup>g</sup>Croitor (2010); <sup>h</sup>Sher (1997); <sup>i</sup>Brugal (1995); <sup>j</sup>Moullé (1992); <sup>k</sup>Sala (1986); <sup>l</sup>Sorbelli et al. (2021a); <sup>m</sup>Flerov (1976); <sup>n</sup>Prat et al. (2013); <sup>o</sup>Vercoutère and Guérin (2010); <sup>p</sup>Empel and Roskoz (1963).

Taxon	Locality	Measures	Ll	Tm	PTW	DTW
<i>Leptobos</i> gr. LSEM <sup>a, b</sup>	Les Étouaires, St. Vallier, Montopoli, Villarroya (France, Italy, Spain)	<b>Mean (N)</b>	72.2 (47)	40.0 (44)	46.3 (44)	47.0 (46)
		<b>Min-Max</b>	65.0-77.3	35.1-45.8	37.0-52.8	38.2-54
		<b>SD</b>	3.3	3.0	4.3	3.7
<i>Leptobos etruscus</i> <sup>a, b</sup>	Senèze, Matassino, Olivola, Upper Valdarno (France, Italy)	<b>Mean (N)</b>	70.4 (41)	38.80 (42)	43.8 (36)	45.5 (40)
		<b>Min-Max</b>	60.5-76.7	32.5-43.7	32.7-51.8	34.0-52.5
		<b>SD</b>	4.1	2.7	3.4	3.9
<i>B. (Eobison) palaeosinensis</i> <sup>c</sup>	Nihowan Basin (China)	<b>Mean (N)</b>	78.0 (3)	-	-	50.7 (3)
		<b>Min-Max</b>	74.0-80.0	-	-	46.0-53.0
		<b>SD</b>	3.5	-	-	4.0
<i>B. (Eobison) georgicus</i> <sup>d</sup>	Dmanisi (Georgia)	<b>Mean</b>	78.9 (1)	-	50.3 (1)	52.5 (1)
<i>B. (Eobison) sp.</i> <sup>e</sup> (Moyà-Solà, 1987)	Venta Micena (Spain)	<b>Mean (N)</b>	71.5 (15)	-	-	47.2 (17)
		<b>Min-Max</b>	66.6-77.0	-	-	40-53.7
		<b>SD</b>	3.5	-	-	3.6
<i>B. (Eobison) degiulii</i> <sup>f</sup>	Pietrafitta (Italy)	<b>Mean (N)</b>	74.53 (10)	43.1 (11)	46.7 (10)	49.4 (11)
		<b>Min-Max</b>	64.9-80.4	35.7-45.6	40.6-51.6	42.1-53.2
		<b>SD</b>	5.0	3.4	3.6	3.3
<i>B. (Eobison) degiulii</i> <sup>a</sup> (Masini, 1989)	Pirro Nord (Italy)	<b>Mean (N)</b>	73.8 (11)	42.1 (11)	46.8 (11)	48.7 (11)
		<b>Min-Max</b>	67.1-79.8	39.0-46.8	41.3-49.7	44.3-53.3
		<b>SD</b>	4.0	2.2	2.7	3.0
<i>B. (Eobison) degiulii</i> <sup>f</sup>	Mygdonia basin (Greece)	<b>Mean (N)</b>	78.9 (8)	45.0 (8)	53.1 (8)	52.7 (8)
		<b>Min-Max</b>	73.9-87.2	41.0-48.9	47.6-59.7	46.7-59.5
		<b>SD</b>	4.6	3.1	4.3	4.0
<i>B. (Poephagus) menneri</i> <sup>h</sup> (Sher, 1997)	Untermassfeld (Germany)	<b>Mean (N)</b>	85.8 (33)	-	57.6 (34)	56.2 (35)
		<b>Min-Max</b>	78.5-95.5	-	52.0-66.0	50.5-64.5
		<b>SD</b>	4.1	-	3.7	3.8
<i>B. (Bison) schoetensacki</i> <sup>i, j, k, l</sup> (This paper)	Durfort, Le Vallonnet, Mauer, Isernia, Vallparadis (France, Germany, Italy, Spain)	<b>Mean (N)</b>	89.0 (43)	48.8 (38)	57.0 (24)	59.1 (46)
		<b>Min-Max</b>	78.9-100.0	34.0-56.5	45.5-65.5	59.1-65.4
		<b>SD</b>	4.8	4.2	5.5	3.7
<i>B. (Bison) priscus</i> ssp. <sup>k, m, n, o</sup> (Brugal, 1995)	Taubach, Habarra, Romain-La-Roche, Cava Filo, Kiputz IX (France, Germany, Italy, Spain)	<b>Mean (N)</b>	93.4 (64)	53.1 (40)	60.8 (12)	63.3 (63)
		<b>Min-Max</b>	80.5-105.0	44.0-60.0	57.0-66.0	52-76.0
		<b>SD</b>	6.1	3.7	2.3	6.3
<i>B. (Bison) bonasus</i> <sup>a, b</sup>	Białowieża (Poland)	<b>Mean (N)</b>	77.0 (39)	45.1 (39)	-	54.4 (39)
		<b>Min-Max</b>	67.0-87.0	38.0-51.0	-	47.0-63.0
		<b>SD</b>	4.7	3.2	-	3.5

**Supplementary Table 24.** Measurements (mm) of the calcanei of *Bison (Eobison) degiulii* from Pietrafitta. Estimated measurements are in italics. Abbreviations as in Fig. S1 and Table S2.

ID Specimen	Side	Lmax	BLB	BLmin	Hmax	Wmax	HST	STT	TCaH	TCW	MFL	MFW	NCFL	CBWmin	CBHmin
SABAP UMB 130028	R	155.0	116.3	89.4	70.0	50.1	58.6	31.9	55.0	38.3	39.0	18.6	42.5	24.9	45.7
SABAP UMB 21. 4.1150	R	137.8	96.0	-	63.6	-	-	-	-	-	28.9	16.6	41.1	-	-
SABAP UMB 21. 4.1152	R	159.8	<i>118.0</i>	98.0	64.5	55.7	-	31.8	55.6	41.7	32	18.6	39.4	25.6	49.7
SABAP UMB 21. 4.1257	?	-	-	-	-	-	-	26.3	-	-	-	-	-	-	-
SABAP UMB 21. 4.1324	L	-	-	90.1	-	<i>54.0</i>	49.5	33.2	45.7	38.3	-	-	-	24.2	43
SABAP UMB 21. 4.1340	L	154.8	116.9	90.8	57.6	55.2	46.7	28.9	48.4	42.7	33.4	16.4	38.9	23.5	43.9
SABAP UMB 21. 4.1368	L	-	-	-	-	-	-	21.2	-	-	-	-	-	19.0	-
SABAP UMB 22. 4.244	L	156.1	114.7	91.7	58.7	50.0	50.8	31.9	49.7	40.7	27.6	16.7	42.2	30.2	43.9
SABAP UMB 22. 4.247/1	L	152.0	116.7	92.3	58.8	53.9	52.4	32.0	48.3	40.3	28.6	16.6	40.4	26.5	45.2

**Supplementary Table 25.** Comparative measurements (mm) of the calcaneum in selected *Leptobos* and *Bison* s.l. samples. Abbreviations as in Fig. S1 and Table S2. Data taken from: <sup>a</sup>Masini (1989); <sup>b</sup>Rodrigo (2011); <sup>c</sup>Tong et al. (2016); <sup>d</sup>Moyà-Solà (1987); <sup>e</sup>this work; <sup>f</sup>Sher (1997); <sup>g</sup>Brugal (1995); <sup>h</sup>Moullé (1992); <sup>i</sup>Sorbelli et al. (2021a); <sup>j</sup>Vasiliev (2008); <sup>k</sup>Empel and Roskoz (1963).

Taxon	Locality	Statistics	Lmax	Hmax	Wmax	HTC	WTC
<i>Leptobos</i> gr. LSEM <sup>a, b</sup>	Les Étouaires, St. Vallier, Montopoli (France, Italy)	Mean (N)	145.5 (6)	62.2 (6)	49.6 (7)	43.1 (7)	34.6 (7)
		Min-Max	126.0-155.5	50.4-81.0	43.2-57.0	37.2-47.5	30.0-38.6
		SD	11.9	10.6	5.2	4.0	3.7
<i>Leptobos etruscus</i> <sup>a</sup>	Senèze, Casa Frata, Matassino, Olivola, (France, Italy)	Mean (N)	149.2 (14)	58.8 (20)	51.1 (17)	43.3 (18)	37.7 (18)
		Min-Max	134.0-159.1	49.8-62.8	42.4-59.0	38.2-47.3	32.7-42.1
		SD	9.0	3.1	4.4	3.0	3.1
<i>B. (Eobison) palaeosinensis</i> <sup>c</sup>	Nihewan Basin (China)	Mean (N)	146.3 (4)	-	47 (4)	-	-
		Min-Max	136-160	-	44-53	-	-
		SD	10	-	4.1	-	-
<i>B. (Eobison) sp.</i> <sup>d</sup>	Venta Micena (Spain)	Mean (N)	151.7 (3)	-	-	-	25.1 (3)
		Min-Max	148.0-158.0	-	-	-	23.0-27.4
		SD	5.5	-	-	-	2.2
<i>B. (Eobison) degiulii</i> <sup>e</sup>	Pietrafitta (Italy)	Mean (N)	152.6	62.2	53.2	50.5	40.3
		Min-Max	137.8-159.8	57.6-70.0	50.0-55.7	45.7-55.6	38.3-42.7
		SD	7.7	4.8	2.5	4.0	1.8
<i>B. (Eobison) degiulii</i> <sup>a</sup>	Pirro Nord (Italy)	Mean (N)	140.8 (2)	58.2 (2)	45.2 (2)	44.2 (2)	36.5 (2)
		Min-Max	138.5-143.0	57.2-59.2	41.3-49.0	42.0-48.0	34.5-39.5
		SD	3.2	1.4	5.4	3.3	2.7
<i>B. (Poephagus) menneri</i> <sup>f</sup>	Untermassfeld (Germany)	Mean (N)	177.1 (21)	70.0 (20)	59.1 (21)	52.4 (21)	44.9 (20)
		Min-Max	163.5-189.0	61.0-79.6	53.4-68.3	47.8-59.3	39.5-49.5
		SD	7.7	4.8	4.0	3.1	3.1
<i>B. (Bison) schoetensacki</i> <sup>g, h, i</sup>	Durfort, Le Vallonnet, Vallparadís (France, Spain)	Mean (N)	170.5 (10)	70.3 (12)	56.8 (12)	50.4 (9)	43.2 (7)
		Min-Max	155.0-189.4	66.5-73.5	50.0-62.0	46.5-53.2	38.3-46.9
		SD	10.3	2.3	4.2	2.3	3.0
<i>B. (Bison) priscus priscus</i> <sup>j</sup>	Krasny Yar, R–W (Russia)	Mean (N)	188.3 (23)	74.8 (50)	65.1 (44)	52.4 (4)	49.6 (24)
		Min-Max	163.0-201.0	66.0-85.7	56.0-75.0	46.0-57.0	39.5-54.6
		SD	11.3	-	5.4	3.6	4.3
<i>B. (Bison) bonasus</i> <sup>k</sup>	Białowieża (Poland)	Mean (N)	159.8 (33)	-	56.0 (28)	43.2 (33)	40.0 (33)
		Min-Max	142.0-181.0	-	49.0-66.0	37.0-50.0	34.0-50.0
		SD	11.3	-	5.4	3.6	4.3

**Supplementary Table 26.** Comparative measurements (mm) of the metatarsal in selected *Leptobos* and *Bison* s.l. samples. Abbreviations as in Fig. S1 and Table S2. Data taken from: <sup>a</sup>Masini (1989); <sup>b</sup>Rodrigo (2011); <sup>c</sup>Garrido (2008); <sup>d</sup>Bukshianidze (2005); <sup>e</sup>this work; <sup>f</sup>Maniakas and Kostopoulos (2017); <sup>g</sup>Kostopoulos et al. (2018); <sup>h</sup>Sher (1997); <sup>i</sup>Brugal (1994); <sup>j</sup>Moullé (1992); <sup>k</sup>Schertz (1936); <sup>l</sup>Sala (1986); <sup>m</sup>Sorbelli et al. (2021a); <sup>n</sup>Breda et al. (2010); <sup>o</sup>Vercoutère and Guerin (2010); <sup>p</sup>Prat et al. (2003); <sup>q</sup>Castañón et al. (2012); <sup>r</sup>Empel and Roskoz (1963).

Taxon	Locality	Statistics	Lmax	PEW	PET	DW	DT	DEW	DET
<i>Leptobos elatus</i> <sup>a, b</sup>	Les Étouaires, Villarroya (France, Spain)	<b>Mean (N)</b>	285.7 (24)	49.5 (38)	48.2 (31)	32.1 (23)	31.7 (17)	54.9 (24)	34.6 (23)
		<b>Min-Max</b>	267.2-297.0	45.0-56.8	42.3-53.7	28.5-34.6	28.8-34.5	49.2-63.3	31.9-37.9
		<b>SD</b>	7.3	3.0	2.7	2.1	1.8	3.6	1.5
<i>Leptobos etruscus</i> <sup>a, b, c</sup>	Senèze, Matassino, Olivola (France, Italy)	<b>Mean (N)</b>	267.7 (29)	50.1 (47)	49.2 (45)	33.3 (39)	32.8 (37)	55.5 (37)	34.6 (36)
		<b>Min-Max</b>	240.0-290.5	45.3-55.7	43.0-54.0	28.6-38.2	27.6-37.8	47.1-60.5	29.7-38.8
		<b>SD</b>	13.0	3.2	3.3	2.8	2.8	3.8	2.2
<i>B. (Eobison) palaeosinensis</i> <sup>a, c</sup>	Nihowan Basin (China)	<b>Mean (N)</b>	256.9 (7)	51.3 (7)	50.7 (6)	32.2 (2)	33.2 (2)	59.4 (7)	31.6 (1)
		<b>Min-Max</b>	237.0-280.0	46.5-57.0	45.0-60.0	31.4-31.9	30.9-35.5	52.5-67.0	-
		<b>SD</b>	18.2	4.8	6.3	1.1	3.3	5.8	-
<i>B. (Eobison) sp.</i> <sup>d</sup>	Venta Micena (Spain)	<b>Mean (N)</b>	264.7 (15)	48.5 (23)	51.1 (24)	34.5 (19)	32.8 (20)	34.4 (20)	57.3 (20)
		<b>Min-Max</b>	240.9-286.2	45.0-53.9	43.5-59.4	29.6-37.7	27.4-38.0	29.5-38.3	50.2-63.8
		<b>SD</b>	12.9	3.7	4.4	2.5	3.3	2.2	4.0
<i>B. (Eobison) degiulii</i> <sup>e</sup>	Pietrafitta (Italy)	<b>Mean (N)</b>	276.5 (10)	57 (7)	50.1 (6)	37.3 (8)	36.5 (7)	61.1 (11)	37.3 (12)
		<b>Min-Max</b>	250.3-296.0	47.8-64.5	35.9-56.8	34.5-42.8	33.3-40.6	52.9-71.3	33.5-41.2
		<b>SD</b>	17.6	5.8	8.6	2.8	2.4	5.3	2.6
<i>B. (Eobison) degiulii</i> <sup>a, e</sup>	Pirro Nord (Italy)	<b>Mean (N)</b>	252.9 (2)	53.8 (5)	53.1 (4)	34.6 (1)	42.6 (2)	59.3 (2)	34.5 (1)
		<b>Min-Max</b>	246.8-259.0	50.6-58.8	49.0-56.4	-	32.4-52.7	59.2-59.3	-
		<b>SD</b>	8.6	4.2	3.4	-	14.4	0.1	-
<i>B. (Eobison) degiulii</i> <sup>f</sup>	Mygdonia Basin (Greece)	<b>Mean (N)</b>	275.5 (10)	55.3 (16)	55.0 (17)	34.3 (15)	35.2 (14)	63.8 (12)	39.3 (12)
		<b>Min-Max</b>	261.3-286.9	51.1-62.1	51.4-64.0	31.1-38.1	31.9-40.3	59.5-70.6	36.9-40.9
		<b>SD</b>	8.4	2.9	3.5	2.3	2.6	3.2	1.2
<i>B. (Eobison) cf. degiulii</i> <sup>a, e</sup>	Capena (Italy)	<b>Mean (N)</b>	267.8 (1)	56.7 (1)	58.0 (1)	39.7 (1)	36.8 (1)	66.0 (1)	37.0 (1)
<i>B. (Poephagus) menneri</i> <sup>d, g</sup>	Untermassfeld (Germany)	<b>Mean (N)</b>	315.0 (18)	64.0 (18)	61.7 (18)	41.3 (18)	41.0 (17)	72.8 (19)	45.1 (19)
		<b>Min-Max</b>	301.4-329.0	56.9-72.3	53.8-68.6	35.6-47.3	35.7-45.2	64.5-80.0	39.5-50.6
		<b>SD</b>	9.5	4.5	4.9	3.9	3.1	4.8	2.8

<i>B. (Bison) schoetensacki</i> <sup>d, e, h, i, j, k, l, m</sup>	Durfort, Le Vallonnet, Mauer, Süßenborn,	<b>Mean (N)</b>	287.7 (27)	62.4 (30)	59.7 (30)	41.1 (24)	40.4 (24)	70.5 (28)	42.3 (21)
	Vallparadís, Cromer Forest bed	<b>Min-Max</b>	260.0-323.0	53.0-82.0	48.6-69.0	33.6-53.0	33.6-47.0	61.3-85.0	34.5-47.3
	(France, Germany, Spain, UK)	<b>SD</b>	15.6	6.0	4.8	4.2	3.7	6.8	3.7
<i>B. (Bison) priscus</i> <sup>d, j, k, n, o, p</sup>	Romain-La-Roche, Roter berg, Taubach,	<b>Mean (N)</b>	289.0 (43)	65.4 (47)	62.3 (17)	42.9 (33)	43.6 (14)	78.8 (46)	45.3 (33)
	Cava Filo, Habarra, Kiputz IX, Joint Mitnor Cave	<b>Min-Max</b>	254.6-318.3	51.0-79.0	56.0-68.0	36.5-53.9	33.7-51.9	68.5-91.0	38.9-51.5
	(France, Germany, Italy, Spain, UK)	<b>SD</b>	15.8	5.6	3.9	5.1	5.2	6.2	3.3
<i>B. (Bison) bonasus</i> <sup>q</sup>	Białowieża	<b>Mean (N)</b>	263.5 (36)	59.0 (36)	54.1 (36)			63.2 (36)	42.0 (36)
	(Poland)	<b>Min-Max</b>	242.0-288.0	52.0-69.0	48.0-63.0			56.0-72.0	38.0-48.0
		<b>SD</b>	10.9	5.0	4.1			4.6	2.8

**Supplementary Table 27.** Principal component analysis of metatarsals using seven selected variables (see Section 3 and Fig. 9). Eigenvalue and % variance of the PCs and coefficients of each variable for each PC are shown. Abbreviations as in Table 1.

	PC 1	PC 2	PC 3	PC 4	PC 5	PC 6	PC 7
<b>Eigenvalue</b>	0.00148352	0.000553658	0.00040309	0.000359229	0.000158925	0.000122487	7.93E-15
<b>% Variance</b>	48.152	17.971	13.083	11.66	51.584	39.757	2.57E-11
<b>mv Lmax</b>	-0.88239	-0.058484	-0.036863	0.057929	-0.2216	0.14591	0.37796
<b>mv PET</b>	0.050947	0.40536	0.23537	-0.79111	0.029613	-0.089971	0.37796
<b>mv PEW</b>	0.20854	-0.16965	-0.12751	0.12667	-0.53584	-0.68224	0.37796
<b>mv DT</b>	0.14508	-0.058862	0.809	0.39353	0.11606	0.099089	0.37796
<b>mv DW</b>	0.16084	-0.76727	-0.19639	-0.27216	0.2999	0.19999	0.37796
<b>mv DETm</b>	-0.039181	0.34412	-0.35354	0.30632	0.66133	-0.28462	0.37796
<b>mv DEW</b>	0.35616	0.30479	-0.33007	0.17882	-0.34946	0.61184	0.37796

**Supplementary Table 28.** Measurements (mm) of the phalanges of *Bison (Eobison) degiulii* from Pietrafitta. Estimated measurements are in italics. Abbreviations as in Fig. S1 and Table S2.

ID Specimen	Element	Lmax	Wmax	Tmax	PEAW	PEAT	DEW	DET	SOL
SABAP UMB 20. 1.6808/1	Proximal phalanx	75.00	31.70	34.60	30.30	27.70	22.80	28.20	-
SABAP UMB 20. 1.6808/2	Proximal phalanx	69.30	29.30	35.20	-	-	21.50	25.42	-
SABAP UMB 21. 4.1199	Proximal phalanx	79.2	34.7	41.7	31.1	32.4	30.0	30.5	-

SABAP UMB 21. 4.1200	Proximal phalanx	72.7	34.0	39.5	29.6	29.0	29.6	31.2	-
SABAP UMB 21. 4.1201	Proximal phalanx	75.8	33.4	41.6	31.4	41.3	29.9	33.2	-
SABAP UMB 21. 4.1202	Proximal phalanx	76.7	33.8	41.2	30.6	29.8	29.6	29.7	-
SABAP UMB 21. 4.1203	Proximal phalanx	76.10	32.90	40.20	29.80	29.80	29.50	33.00	-
SABAP UMB 21. 4.1249	Proximal phalanx	70.2	33.6	42.3	30.6	31.2	29.46	30.6	-
SABAP UMB 21. 4.1250	Proximal phalanx	73.8	32.6	41.4	28	27.9	28.7	3.2	-
SABAP UMB 21. 4.1316	Proximal phalanx	65.4	33.4	36.8	29.8	27.5	29.2	31.1	-
SABAP UMB 21. 4.1342	Proximal phalanx	68.9	27.6	33.3	25.8	26.8	21.7	26.3	-
SABAP UMB 21. 4.1343	Proximal phalanx	75.2	30.3	37.7	26.7	-	23.1	28.4	-
SABAP UMB 21. 4.1345	Proximal phalanx	-	32.6	-	28.7	-	-	-	-
SABAP UMB 21. 4.1346	Proximal phalanx	-	31.0	40.0	29.3	29.6	-	-	-
SABAP UMB 21. 4.1347	Proximal phalanx	-	31.0	37.0	28.6	29.7	-	-	-
SABAP UMB 21. 4.1348	Proximal phalanx	-	-	-	-	-	-	27.5	-
SABAP UMB 21. 4.1154	Proximal phalanx	76.3	35.7	44.8	34.3	32.2	31.5	34.2	-
SABAP UMB 21. 4.1155	Proximal phalanx	73.8	33.8	41.7	32.2	29.1	29.5	32.2	-
SABAP UMB 21. 4.1156	Proximal phalanx	72.8	33.1	41	29.2	29.5	27.9	31.8	-
SABAP UMB 21. 4.1157	Proximal phalanx	77.5	32.7	40.8	29.4	28.1	25.3	30.2	-
SABAP UMB 21. 4.1158	Proximal phalanx	24.7	34.1	43.6	31.6	29.9	28.8	31.0	-
SABAP UMB 22. 4.245	Proximal phalanx	71.3	35.3	41.9	34.6	36.0	29.7	31.0	-
SABAP UMB 21. 4.1204	Intermediate phalanx	50.9	34.2	36.7	32.1	31.4	-	25.0	-
SABAP UMB 21. 4.1205	Intermediate phalanx	54.0	33.6	39.5	32.7	30.6	-	31.4	-
SABAP UMB 21. 4.1206	Intermediate phalanx	52.5	33.9	39.0	31.7	25.9	-	24.7	-
SABAP UMB 21. 4.1207	Intermediate phalanx	51.9	31.2	37.0	30.1	28.6	-	24.0	-
SABAP UMB 21. 4.1208	Intermediate phalanx	-	-	-	-	-	-	25.6	-
SABAP UMB 21. 4.1251	Intermediate phalanx	45.5	31.4	35.1	29.8	24.7	-	24.4	-
SABAP UMB 21. 4.1252	Intermediate phalanx	47.5	32.0	37.8	29.6	26.0	-	23.4	-
SABAP UMB 21. 4.1255	Intermediate phalanx	51.5	35.0	42.5	34.2	31.2	-	27.7	-
SABAP UMB 21. 4.1274	Intermediate phalanx	52.1	30.0	37.7	27.5	24.4	-	23.8	-
SABAP UMB 21. 4.1275	Intermediate phalanx	50.0	29.3	38.4	27.3	25.0	-	24.8	-
SABAP UMB 21. 4.1276	Intermediate phalanx	49.7	31	37.8	29.9	25.6	-	27.3	-
SABAP UMB 21. 4.1317	Intermediate phalanx	47.4	31.9	33.0	30.0	23.3	-	27.2	-

SABAP UMB 21. 4.1349	Intermediate phalanx	51.6	33.5	41.0	32.9	26.7	-	30.6	-
SABAP UMB 21. 4.1350	Intermediate phalanx	57.8	-	-	-	-	-	28.1	-
SABAP UMB 21. 4.1351	Intermediate phalanx	-	-	-	-	-	-	20.9	-
SABAP UMB 21. 4.1352	Intermediate phalanx	-	-	-	-	-	-	26.8	-
SABAP UMB 21. 4.1159	Intermediate phalanx	51.2	33.2	42.6	32.8	30.0	-	30.9	-
SABAP UMB 21. 4.1160	Intermediate phalanx	54.0	31.5	41.7	31.6	27.3	-	27.1	-
SABAP UMB 20. 1.6808/3	Intermediate phalanx	50.6	28.80	35.70	28.00	28.20	20.70	23.20	-
SABAP UMB 20. 1.6808/4	Intermediate phalanx	42.40	28.70	34.40	27.20	21.60	21.60	22.8	-
SABAP UMB 22. 4.246	Intermediate phalanx	52.0	31.4	38.4	31.1	28.0	-	28.7	-
SABAP UMB 21. 4.1253	Distal phalanx	59.80	32.40	37.2	26.6	33.1	-	-	56.4
SABAP UMB 21. 4.1254	Distal phalanx	61.90	26.20	37.80	25.90	33.00	-	-	56
SABAP UMB 21. 4.1256	Distal phalanx	77.90	48.60	41.10	26.80	42.20	-	-	66.4
SABAP UMB 21. 4.1354	Distal phalanx	67.50	32.50	40.00	27.40	-	-	-	65.5
SABAP UMB 21. 4.1355	Distal phalanx	71.20	35.40	-	28.50	-	-	-	65.4
SABAP UMB 21. 4.1357	Distal phalanx	-	-	-	26.2	37.0	-	-	-
SABAP UMB 21. 4.1358	Distal phalanx	-	28.60	38.5	35.20	-	-	-	-

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## Supplementary References

- Asperen van, E.N., Kahlke, R.D., 2017. Dietary traits of the late early Pleistocene *Bison menneri* (Bovidae, Mammalia) from its type site Untermassfeld (Central Germany) and the problem of Pleistocene ‘wood bison’. *Quat. Sci. Rev.* 177, 299–313.
- Breda, M., Collinge, S.E., Parfitt, S.A., Lister, A.M., 2010. Metric analysis of ungulate mammals in the early Middle Pleistocene of Britain, in relation to taxonomy and biostratigraphy: I: Rhinocerotidae and Bovidae. *Quat. Int.* 228, 136–156.
- Brugal, J.-P., 1995. Le bison (Bovidae, Artiodactyla) du Pléistocène moyen ancien de Durfort (Gard, France). *Bull. Mus. Natl. Hist. Nat.* 16C 2–4, 349–381.
- Brugal, J.P. and Fosse, P., 2005. Les grands bovidés (*Bison* cf. *schoetensacki*) du site Pléistocène moyen de la Vayssière (Aveyron, France). in Cregut-Bonnoure E. (ed.), *Les ongulés holarctiques du Pliocène et du Pléistocène. Quaternaire h.s. 2: 75–80.*
- Bukhsianidze, M., 2005. The fossil Bovidae of Dmanisi. Ph.D. Dissertation, Università degli Studi di Ferrara.
- Castaños, J., Castaños, P., Murelaga, X. and Alonso-Olazabal, A., 2012. Kiputz IX: un conjunto singular de bisonte estepario (*Bison priscus* Bojanus, 1827) del Pleistoceno Superior de la Península Ibérica. *Ameghiniana* 49, 247–261.
- Empel, W. and Roskocz, T., 1963. Das Skellett der Gliedmassen des Wisents, *Bison bonasus* (Linnaeus, 1758) *Acta Theriol.* 7, 259–297.
- Duvernois, M.P. and Guérin, C., 1989. Les Bovidae (Mammalia, Artiodactyla) du Villafranchien Supérieur d’Europe Occidentale. *Geobios* 22, 339–379.
- Kostopoulos, D.S., Maniakas, I., Tsoukala, E., 2018. Early bison remains from Mygdonia Basin (Northern Greece). *Geodiversitas* 40, 283–319.
- Maniakas, I., Kostopoulos, D.S., 2017 Morphometric-palaeoecological discrimination between *Bison* populations of the western Palaearctic. *Geobios* 50, 155–171.

- Masini, F., 1989. I bovini villafranchiani dell'Italia. Ph.D. Dissertation, Università di Modena-Bologna-Firenze-Roma.
- Moullé, P.É., 1992. Les grands mammifères du Pléistocène inférieur de la grotte du Vallonnet (Roquebrune-Cap-Martin, Alpes-Maritimes). Étude paléontologique des Carnivores, Équidés, Suidés et Bovidés. Ph.D. Dissertation, Muséum national d'Histoire naturelle, Paris.
- Moyà-Solà, S., 1987. Los bóvidos (Artiodactyla, Mammalia) del yacimiento del Pleistoceno inferior de Venta Micena (Orce, Granada, España). Paleontol. Evol. Mem. Esp. 1, 181–236.
- Prat, F., Delpech, F., Cancel, N., Guadelli, J.L. and Slott-Moller, R., 2003. Le Bison des steppes, *Bison priscus* Bojanus, 1827, de la grotte d'Habarra à Arudy (Pyrénées-Atlantiques). PALEO 15, 1-102.
- Sala, B., 1986. *Bison schoetensacki* Freud. from Isernia la Pineta (early Mid-Pleistocene – Italy) and revision of the European species of bison. Palaeont. It. 74, 113–170.
- Schertz, E., 1936. Zur Unterscheidung von *Bison priscus* Boj. und *Bos primigenius* Boj. an Metapodien und Astragalus, nebst Bemerkungen über einige diluviale Fundstellen. Seckenbergiana 18, 37–71.
- Sher, A.V., 1997. An Early Quaternary *Bison* population from Untermaßfeld: *Bison menneri* sp. nov. In: Kahlke, R.D. (Ed.), Das Pleistozän von Untermaßfeld bei Meiningen (Thüringen). Teil 2. Habelt-Verlag, Bonn, 2001. p. 101–180.
- Sorbelli, L., Alba, D.M., Cherin, M., Moullé, P.É., Brugal, J.P. and Madurell-Malapeira, J., 2021a. A review on *Bison schoetensacki* and its closest relatives through the early-Middle Pleistocene transition: Insights from the Vallparadís Section (NE Iberian Peninsula) and other European localities. Quat. Sci. Rev. 261, 106933.
- Tong, H.W., Chen, X., Zhang, B., 2016. New fossils of *Bison palaeosinensis* (Artiodactyla, Mammalia) from the steppe mammoth site of early Pleistocene in Nihewan Basin, China. Quat. Int. 445, 450–468.
- Vasiliev, S.K., 2008. Late Pleistocene bison (*Bison p. priscus* Bojanis, 1827) from the southeastern part of western Siberia. Archaeol. Ethnol. Anthropol. Eurasia 34, 34–56.

Vercoutère, C., Guérin, C., 2010. Les Bovidae (Mammalia, Artiodactyla) du Pléistocène moyen final de l'aven de Romain-la-Roche (Doubs, France). *Rev. Paléobiol.* 9, 655–696.

### Supplementary Figures Captions

**Fig. S1** Measurements taken in this work: a1–3, Cranium; b1–2, Atlas; c, Tooth; d, Mandible; e, Pelvis; f1–4, Humerus; g1–5 Metapodials; h1–4, Tibia; i1–5, Femur; j1–4, Radius; k1–4, Phalanges; l1–2, Semilunar; m1–2, Scaphoid; n1–2, Cubonavicular; o1–2, Scapula; p1–2, Malleolus; q1–2, Cuneiform; r1–2, Unciform; s1–2, Magnum; t1–2, Pyramidal; u1–2, Astragalus; v1–2, Calcaneum. Elements drawn not in scale.

Abbreviations are explained in Table S2.

**Fig. S2** Humeri and radius-ulnae of *Bison (Eobison) degiulii* from Pietrafitta. a, Left humerus SABAP UMB 21. 4.1144 in anterior (a1) and posterior (a2) views; b, Right humerus SABAP UMB 22. 4.247/2 in anterior (b1), posterior (b2), and lateral (b3) views; c, Left radius-ulna SABAP UMB 22. 4.247/10 in anterior (c1), posterior (c2), and medial (c3) views; d, Right radius-ulna SABAP UMB 21. 4.1137 in anterior (d1), lateral (d2), posterior (d3) views; Scale bar: 100 mm.

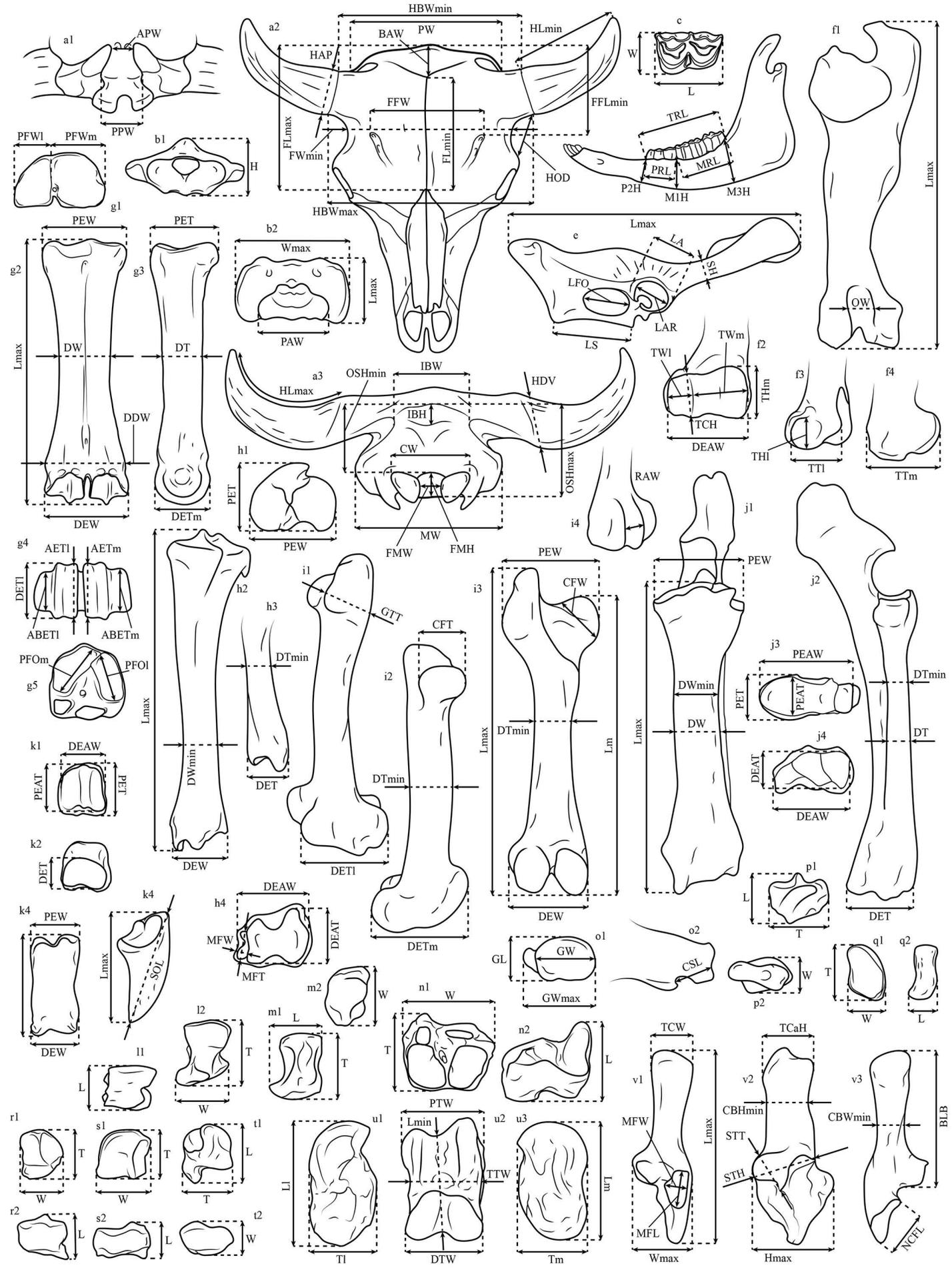
**Fig. S3** Carpal bones of *Bison (Eobison) degiulii* from Pietrafitta. a, Left pyramidal SABAP UMB 21. 4.1406 in lateral (a1) and medial (a2) views; b, Right pyramidal SABAP UMB 21. 4.1287 in lateral (b1) and medial (b2) views; c, Right semilunar SABAP UMB 21. 4.1407 in proximal (c1) and distal (c2) views; d, Right semilunar SABAP UMB 21. 4.1286 in proximal (d1) and distal (d2) views; e, Left unciform SABAP UMB 21. 4.1425 in proximal (e1) and distal (e2) views; f, Right unciform SABAP UMB 21. 4.1289 in proximal (f1) and distal (f2) views; g, Right pisiform in medial view; h, Left pisiform in medial view; i, Left scaphoid SABAP UMB 21. 4.1381 in proximal (i1) and lateral (i2) views; j, Right scaphoid SABAP UMB 21. 4.1401 in proximal (j1) and lateral (j2) views; k, Left magnum-trapezoid SABAP UMB 21. 4.1423 in distal (k1) and proximal (k2) views; l, Right magnum-trapezoid SABAP UMB 21. 4.1424 in distal (l1) and proximal (l2) views. Scale bar: 50 mm.

**Fig. S4** Pelvis and hindlimb bones of *Bison (Eobison) degiulii* from Pietrafitta. a, Right hemipelvis SABAP UMB 21. 4.1138 in lateral view; b, Right hemipelvis SABAP UMB 21. 4.1136 in lateral view; c, Left patella SABAP UMB 21. 4.1265 in anterior (c1) and posterior (c2) views; d, Left femur SABAP UMB 21. 4.1149 in distal (d1), anterior (d2), medial (d3), and posterior (d4) views; e, Right tibia SABAP UMB 21. 4.1148 in anterior (e1), medial (e2), posterior (e3), lateral (e4) and distal (e5) views; f, Left tibia SABAP UMB 19.

4.1176 in anterior (f1), proximal (f2), distal (f3), posterior (f4), lateral (f5), and medial (f6) views. Scale bar: 100 mm.

**Fig. S5** Tarsal bones of *Bison (Eobison) degiulii* from Pietrafitta. a, Right astragalus SABAP UMB 130142 in anterior (a1), posterior (a2), and lateral (a3) views; b, Right astragalus SABAP UMB 21. 4.1242 in anterior (b1), posterior (b2), and lateral (b3) views; c, Left calcaneum SABAP\_UMB 22. 4.244 in medial (c1) and anterior (c2) views; d, Right calcaneum SABAP UMB 130028 in anterior (d1) and posterior (d2) views; e, Left cubonavicular SABAP UMB 21. 4.1153 in proximal (e1), anterior (e2), distal (e3), and lateral (e4) views; f, Right cubonavicular SABAP UMB 21. 4.1247 in proximal (f1), anterior (f2), distal (f3), and lateral (f4) views; g, Left cuneiform SABAP UMB 21. 4.1413 in proximal (g1) and medial (g2) views; h, Right cuneiform SABAP UMB 21. 4.1411 in proximal (h1) and medial (h2) views; j, Right malleolus SABAP UMB 21. 4.1290 in medial (j1) and distal (j2) views; k, Left malleolus SABAP UMB 21. 4.1411 in proximal (k1) and distal (k2) views. Scale bar: 50 mm.

**Fig. S6** Phalanges and sesamoids of *Bison (Eobison) degiulii* from Pietrafitta. a, Right proximal phalanx SABAP UMB 21. 4.1158 in anterior (1), axial (2), proximal (3) and distal (4) views; b, Left proximal phalanx SABAP UMB 20. 1.6808/1 in anterior (1), axial (2), proximal (3) and distal (4) views; c, Right intermediate phalanx SABAP UMB 20. 1.6808/4 in in anterior (1), axial (2), proximal (3) and distal (4) views; d, Right intermediate phalanx SABAP UMB 21. 4.1274 in anterior (1), axial (2), proximal (3) and distal (4) views; e, sesamoid SABAP UMB 21. 4.1436 in anterior (1) and lateral (2) views; f, sesamoid SABAP UMB 21. 4.1453 in anterior (1) and posterior (2) views. g, Right distal phalanx SABAP UMB 21. 4.1254 in abaxial (1), proximal (2), posterior (3) and anterior (4) views; h, Right distal phalanx SABAP UMB 21. 4.1256 in abaxial (1), proximal (2), posterior (3) and anterior (4) views. Scale bar: 50 mm.

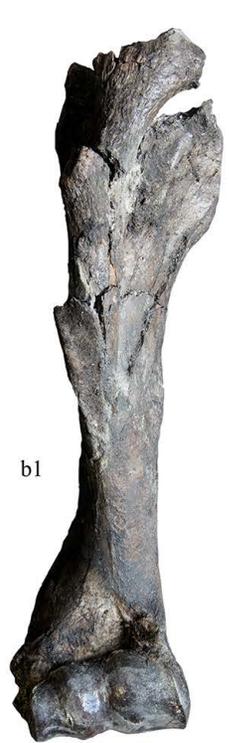




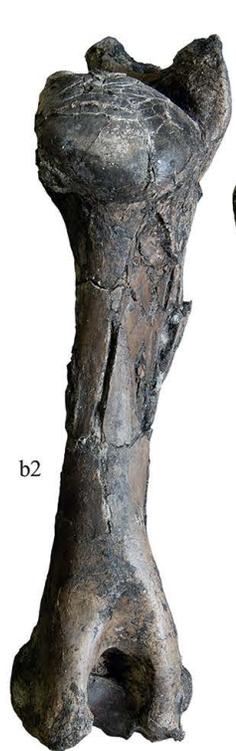
a1



a2



b1



b2



b3



c1



c2



c3



d1



d2



d3

