PROVISIONAL CORRELATION OF CLIMATIC CHANGES, DEPOSITS AND ASSOCIATED CULTURES IN THE HORN OF AFRICA

PERIOD		DIAGRAMMATIC CURVE OF CLIMATIC CHANGES	WESTERN BRITISH SOMALILAND	WEBI SHEBELI	UPPER NOGAL	LOWER NOGAL	DANAKIL	NORTH COAST	EAST COAST	CULTURES
		Wetter ← → Drier	Erosion to present contours	Erosion to present contours	Erosion to present contours	Erosion to present contours	Erosion to present contours / Terraced gypsum-saline deposits in Danakil lakes affected by earth movement	Present sea-level: unconsolidated dune sands Disconformity	Present sea-level: unconsolidated dune sands Disconformity	Strandlooping variant / Doian / Doian of 'neolithic' facies; Somaliland Wilton of 'neolithic' facies / Somaliland Wilton / Strandlooping variant
Recent	Second post-pluvial wet phase		—	Unconsolidated dune sands: minor erosional phase	—	Unconsolidated dune sands: disconformity				
	First post-pluvial wet phase		Aeolian sands Brown sandy alluvium with pebble lenses Erosion	Compact dune sands Torrent gravel and brown alluvium in valleys: iron-crete on higher slopes Erosion and formation of low-level bench	Fine sandy silt Torrent gravel and brown alluvium in valleys Erosion and formation of low-level bench	Dune sands blocking estuary mouth Torrent gravels and red alluvium in valleys: tufa formation round springs Erosion and formation of low-level bench	Torrent gravel and gritty alluvium Erosion ?0 m. marine beach Marine transgression	Raised coral reef: ±2 m. raised beach? Gradual marine transgression	Compact dune sands: raised coral reef: ±2 m. raised beach? Gradual marine transgression	Magosio-Doian Transitional Industries Somaliland Magosian Somaliland Stillbay Upper Levalloisian Hargeisan / (Ogaden Wilton)
Upper Pleistocene	Last or Gamblian Pluvial		Land rubble: red sands Younger tug gravels and alluvium II Kunkar formation Younger tug gravels and alluvium I Buried channel erosion Older tug gravels and alluvium	Red bed: upper tufa in pans. Fossil dunes on upper slopes Upper tug gravels and alluvium Red bed: Kunkar formation and lower tufa in pans Lower tug gravels and alluvium Buried channel erosion —	Red bed: gypsum, tufa formation Upper tug gravels and alluvium Red bed: gypsum, tufa formation Lower tug gravels and alluvium Buried channel erosion —	Kunkar formation over alluvium and tufa round springs Upper tug gravels and alluvium Kunkar formation and tufa Lower tug gravels and alluvium Buried channel erosion —	Earth movement: acid lavas Land rubbles Upper alluvial fan deposits Freshwater lake beds: interstratified gravels, sands and clays Kunkar and gypsum Lower alluvial fan deposits Buried channel erosion ? Marine regression ?	Local warping ?Consolidated fossil dune sands and interstratified alluvial red clays and gravels on coastal plains Marine regression to at least −78 m. 5–25 m. raised beach: ? 25 m. lagoon coral	Local warping?: compacting dune sands: red bed Consolidated fossil dune sands and interstratified alluvial clays, sands and gravels Marine regression 5–25 m. raised beach or beaches	Lower Levalloisian Acheulio-Levalloisian (Upper Acheulian)
Lower and Middle Pleistocene	Inter-Pluvial		Calcification (following some ferruginization?)	Draining of Ghedeb Lake Earth movement: ferruginization	Calcification following ferruginization	Prolonged calcification following ferruginization	Earth movement: basalt lavas	Earth movement: Younger basalts ?Younger coral	Earth movement? Inferred high-level beach ±30 m.	
	Kamasian Pluvial ?		Pebble conglomerates, gravels and sands in deep channel ('malas' beds) Erosion of deep channel	15–30 m. terrace gravels Erosion to 15–30 m. terrace	60 m. sheet gravels and gypsiferous beds of central plain Erosion	22–30 m. estuarine gravels and sands Erosion of deep channel	(Kamasian-type lake beds of Awash gorge and marine sediments of North Danakil)? —	Coarse conglomerates, gravels, sands and clays interstratified with acid lavas on coastal plain Old red coral? — —	Marine coral sands? Hiatus —	No recognized culture
	Kageran Pluvial ?		— Valley slope boulder conglomerates and breccias? Prolonged period of valley cutting	Prolonged calcification Valley slope boulder conglomerates and breccias Prolonged period of valley cutting	Prolonged calcification Valley slope boulder conglomerates and breccias Prolonged period of valley cutting	— ? Initial period of gorge cutting	— Boulder conglomerates and marine sands accumulated within the rift Period of movement?	Earth movement: basalt lavas Boulder conglomerates passing laterally into marine sands on coastal plain Gradual elevation of coastal plain	— Conglomerates of the south-east coastal plain Gradual elevation of coastal plain	
Pliocene ?			Plateau conglomerates	Plateau conglomerates	Plateau conglomerates	—	—	—	—	

TENTATIVE CORRELATION OF CLIMATES, STRAND-LINES AND MATERIAL CULTURES IN THE HORN, NORTH AND EAST AFRICA

Geological events in the Horn	Climate in the Horn	Culture in the Horn	Geological events in East Africa	Culture in East Africa	Geological events in the Nile and Fayum	Geological events in Kharga Oasis	Culture in Egypt	Geological events Sahara-Arabian belt (Huzayyin)	Strand-lines in the Horn	Strand-lines in the Mediterranean
Erosion to present contours. Unconsolidated dune sands Minor erosion	Drier Wetter	Doian/Somaliland Wilton	Nakuran Wet Phase	Wilton C/Neolithic cultures, etc.	Aggradation in Nile: Fayum lakes at 18, 10, −2 m.	Increasing desiccation	Neolithic	Oscillations		
Compact dune sands	Drier	Transitional industries	Dry	—				Desiccation	Gradual transgression to ± 2 m. then fall to present sea-level	Gradual transgression to present sea-level
Torrent gravel and alluvium: incipient ironcrete: tufa at springs	Wetter	Somaliland Magosian; Hargeisan; ? Late Stillbay	Makalian Wet Phase	Wilton A and B; Elmenteitan; Late Stillbay; Upper Magosian	Nile degradation gravels: Fayum 24 m. lake falling to −5 m.	Terraces in narrow wadis	Epi-Levalloisian III Khargan: Aterian	'Neolithic Wet Phase'		
Fossil dunes: calcification: earth movement	Dry	Somaliland Stillbay	Dry	Late Stillbay; Lower Magosian			Epi-Levalloisian II	Desert conditions: fossil dunes	Fossil Dunes: eluvial sands and red beds	Fossil Dunes: eluvial sands and clays: red beds
Younger tug gravels and alluvium I and II: tufa at springs Buried channel erosion	Wet Lower Levalloisian	Upper Levalloisian	Gamblian Pluvial (Three subphases)	Upper Aurignacian/ Stillbay Lower Aurignacian/ Developed Levallois	Major Nile bed erosion: Fayum 28 m. lake	Phase 8*a*: tufas: beginning of modern drainage	Epi-Levalloisian I: Levalloiso/Khargan	Pluvial II (with two submaxima in the south)	Marine regression to at least −78 m.	Post-Monastirian major regression to −100 m.
Older tug gravels and alluvium	Wetter	Acheulio-Levalloisian (Upper Acheulian)			Nile aggradation silts: Fayum 34 m. lake	Phase 8*b*: tufas: Lower Sheet gravels	Upper Levalloisian Lower Levalloisian		± 5–25 m. raised beach or beaches	± 5–10 m. Monastirian II beach
Calcification: great earth movements: vulcanicity	Dry	—	Dry: great earth movements: vulcanicity	Kenya Fauresmith	Nile 9 m. terrace Nile 18 m. terrace	Phases 4 and 6: tufas Upper Sheet gravels. Desert conditions	Acheulio-Levalloisian Upper Acheulian	Interpluvial: fossil dunes: volcanic activity	± 30 m. raised beach	± 15–20 m. Monastirian I beach
Terrace gravels Erosion	Wet	— —	Kamasian Pluvial	Acheulian, 1–6, etc.: Chellian, 1–5 Pre-Chellian	Nile 30 m. terrace Nile 45 m. terrace	First Major Pluvial	Chellian: Early Acheulian	Pluvial I—major physiographic phase		Tyrrhenian Beach
Calcification: earth movements: conglomerates, marls and breccias	Dry	—	Dry	—	Nile slope conglomerates	Plateau tufa ?	—	Pre-Pluvial: gradual oncoming of cool and wet conditions. Dry		Milazzian Beach
Prolonged valley cutting Plateau conglomerates	Wet —	— —	Kageran Pluvial —	Kafuan —	Elevation and erosion	Plateau tufa ?				Sicilian Beach