The Mediterranean race in Asia before the iron age

BY

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My study treats of the homogeneity of the Proto-Mediterra-neans of Western Asia living in the Late Neolithic, Chalcolithic and Bronze Age. Their anthropological position and structure, from approximately the VI to the middle of the II millennium B. C., is of utmost interest, because splendid civilizations (as the Hittite, the Sumerian, and the Harappan) rose among them. In the times covered by my study their settlements extended from the Aegean and Phoenician Seas to the Ganges in India, and from the Caspian Sea and Turkestan to the river Tungabhadra in Deccan. From the study of their skeletal remains I assert that this population was comparatively homogeneous with a hiph degree of somatic similarity. The recognition of this Asian Proto-Mediterranean Stock is subject to difficulties and uncertainties not only on account of its conceptual implication, but also from its morphological and biometrical aspects. In fact, on one hand there is the complex of physical characters in a field of extensive variety of permutations and combinations and, on the other hand, the initial isolation of strongly endogamous human groups in particular habitats. This two-fold aspect explains the undeniable variability of their somatic characters and their differentiation into some Regional Varieties or Types.

My pertinent considerations were based on: a) the static existence of their settlements; b) their isolation and independence in various degrees; c) the absence of migration and/or invasions;

d) the phenomenon of progressive brachycephalization; *e*) the morphological study of the skeletal remains; *f*) the biometrical calculation of the anthropometrical data. The Regional Type represents a biological series in which I am able to define a certain morphological distinction from similar others, taking into account both the elements of the social and/or cultural isolation of the population, and the effects of its genetical segregation. The successive biometrical calculation of data shows whether it is a sample taken at random, and further which are the variations from the normal model and/or mean, and what value have the differences shown by the various tests. Generally the series of skulls representing a settlement, and further the complex of settlements forming up a Regional Type, are small and often so small as to make impossible any biometrical calculation of data. While the so-called «ethnical types» are, in my opinion, rather the statistical complex of a series of independent variabilities, these Regional Types represent groups of individuals with similar somatology, and my attempt is to summarize in a single expression both a phenotypical group of biological unities and a genetical distribution. In my study the Type represents the effective grouping of individuals of the same racial unity, living in the same region and habitat (in a wide sense) in the same (relatively) chronological period with very similar or generalized factors of culture. I describe it by some expressions, which can be synthetical, i. e. by mean-values and other biometrical constants and analytical, i. e. by classes of individuals. Then the result of the calculation of data corroborates the assumption of the morphological homogeneity of the Types and of their racial unity. Following the convergence of the cultural elements and the concentration of the biometrical values around some model of uniform settlement, I distinguished among these Asians seven Regional Types which, for short, I called: Troad, Anatolian (Hittite civilization), Syro-Palestinian, Mesopotamian (Sumerian civilization), Iranian (Elamitic civilization), Turkmenian, and Indian (Harappan civilization). Four subjects of discussion must be outlined, even summarily. They are: *a*) The brachycephalization process; *b*) The problem of the Hittites; *c*) The Sumerian problem; *d*) The Indus population and its civilization.
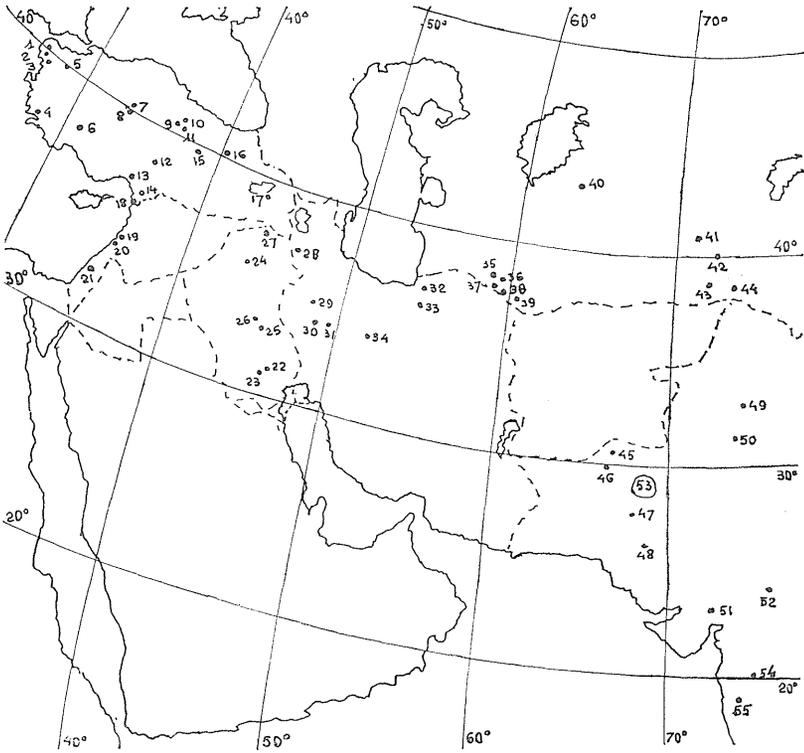
Settlements

(In alphabetical order)

12	Acem Höyük	28	Hasanlu	11	Osmankayasi
7	Ahlatli Bel	33	Hissar vide Tepe H.	8	Polatli Höyük
10	Alaca Höyük	2	Hissarlik	45	Quetta
15	Alishar Höyük	30	Jamshidi vide Tepe J.	18	Ras Shamrah
16	Altin Tepe	26	Jemdet Nasr	39	Serakhs
23	al'Ubaid	20	Kafer edj-Djarra	32	Shah Tepe
38	Anau	35	Kara Tepe	14	Sheyh Höyük
24	Assur	25	Kish	49	Sialkot
5	Baba Köy	40	Koktcha	34	Siyalk vide Tepe S.
31	Bad Hora vide Tepe Bad Hora	1	Kum Tepe	44	Takhirbay
11	Boghaz Köy vide Osmankayasi	6	Kusura	14	Tell esh-Sheikh vide Sheyh Höyük
9	Büyük Gülücek	52	Langhnaj	31	Tepe Bad Hora
19	Byblos	51	Lothal	27	Tepe Gawra
55	Chandoli	29.30.31	Lurisfan vide Tepe Giyan, Tepe Jamshidi, Tepe Bad Hora	29	Tepe Giyan
48	Chanhu daro			33	Tepe Hissar
41	Choust	18	Minet el-Beida vide Ras Shamrah	30	Tepe Jamshidi
—	Evdi Tepesi	21	Megiddo	34	Tepe Siyalk
27	Gawra vide Tepe G.	47	Mohenjo daro	17	Tilki Tepe
53	Gedrosia	4	Müskebi	43	Tupkhona
36	Geoksur	46	Nal	18	Ugarit vide Ras Shamrah
29	Giyan vide Tepe G.	37	Namazga Tepe	22	Ur
3	Hanai Tepe	54	Nevasa	42	Vuadil
50	Harappa			13	Yümük Tepe

The Brachycephalization process

The greater number of the skulls of the Asian Proto-Mediter-raneans are dolichocephalic, but there are also mesocephalic and brachycephalic skulls. In fact, in the total of their cranial indices which I could calculate, 61.1 % are dolicho-, 28.1 % meso-, and 10.8 % brachycephalic. Brachycephalization does not appear in the various Regional Types on the same chronological level. It appears very early in the Troad Type (towards the middle of the IV millennium), in the Anatolian Type (towards 2500 at Alishar Höyük), in the Mesopotamian Type (ca. 1900 at Kish), and much later in the Syro-Palestinian Type (towards 1500 B. C.). In my opinion brachycephalization consists in an evolutive continual movement subsequent to the long-headed forms of the Palaeolithics and Neolithics and is essentially the constant flexible settlement of the various cranial unities through the aggregate morpho-architectural forces which respond to the anatomical and functional factors in reciprocal adaptation; as such, it represents a phylogenetic evolution independent from any racial difference. I therefore reject the thesis which, particularly for Asia, has been propounded in many instances, i. e. that the Brachycephals formed a population of their own with their own centres of irradiation, and that they had migrated in various directions during the Late Neolithic and Chalcolithic times, and that there are two brachycephalic races, the Alpine and the Armenoid. My own views are: (1) there is no evidence of brachycephalic populations in the period covered by muy study which might have influenced the local fundamental dolichocephaly; (2) there is no element proving migration of population from one region to another in the mentioned period; (3) the Alpines and Armenoids represent morphological or morpho--architectural aspects or developments of the brachycephalization and are no independent genetic unities, thus not at all Races or Sub-races. As I admit that the large form of the skull represents an evolutive effect, I incorporate this concept into the general dynamism of human evolution. The concept of evolution means both development and expansion, and it is equivalent to the other concept of descent with modifications. Evolution does not auto-

matically imply a process of improvement, but merely a process of change (differentiation). It is obvious though that evolution is directed towards a higher stage of organization.

The Problem of the Hittites

There is a theory affirming that the Hittite civilization was the product of the highly developed culture of a rather small population extraneous to the genetical type of the Anatolian Proto-Mediter-raneans. Such a theory is very elaborate, as it involves the hypothesis of a long mass-migration of a compact group of tribes from very distant regions up to the Anatolian Central Plateau through difficult and tortuous routes. It is an achaeologists and ethnologists theory supported by cultural elements and pottery comparisons to which the physical anthropologists give less impor-tance. The many remains of this civilization show a distinctive cultural stage of high level, which compares favourably with the coeval or nearly coeval civilizations of the Mediterraneans, as the Egyptian, the Minoan, the Sumerian, and the Harappan. The function of the ruling caste was very advanced, so were military affairs, political organization, legislation and justice. However we must remember that it is a rather recent civilization, as the beginn-ing of its development can be approximately dated to 1700 B. C. and its summit to about 1500. From such a time it declined constantly and dwindled away at about 1200 B. C. In my opinion, this civilization is essentially the result of a constant progression of cultural achievements of the whole population. Therefore it is not necessary to attribute it to another genotype than the Anato-lian. The term «Hittite» is to be used for cultural elements, and not as a distinctive genetic division of the Anatolian population of the period covered by my study. My thesis is supported by the anthropometric data which show «no significant» [1], differen-

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[1]   With Student's t-test ('which derives from the «small samples theory»)
we ascertain whether a difference between two means be real or casual. The
t-values indicate the degree of probability 'with which the casual values can

tiation among the various local varieties, and no special aspect of
the population of the so-called «Hittite settlements» in the Northern
Plateau which show themselves as randomized samples of the
Anatolian Regional Type.

The Sumerian Problem

The skeletal remains of the city-states of al'Ubaid and Ur
represent the so-called Sumerian population which has developed
a refined culture turned into one of the most advanced civilizations
of the Mediterranean Basin and Near East, as evidenced by the
Royal Tombs of 3200 B. C. Some scholars assume that the
Sumerians formed a distinct population from the rest of the
Mesopotamians and that they have migrated into the Euphrates-
-Tigris valley. I find no element to corroborate such a thesis
and I insist that «Sumerian» is a term to indicate culture (religion,
language, legislation, military facts, etc.) but not a population.
I am of the opinion that the al'Ubaid and Ur inhabitants were of
the same stock of all the dwellers of the other settlements. My
biometrical analysis of data shows that these individuals were
fundamentally of a same type and that the differentiations are
not morpho-architectural but merely metrical, arising from the
normal group-variability. In addition I note that Keith who
examined the skeletal remains, considered (together with Buxton)
the skulls of al'Ubaid, Ur, and Kish, to belong to the Mediterranean
race. Their view is that the population was the same, only divided
into three local groups.

The Indus population and its civilization

The Indus civilization, surely one of the greatest of the Asian
Proto-Mediterraneans, extended from Iran to Bengal, from the

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produce a difference analogous to that we have found. We assume, by conven-
tion, that a difference be «significant» when the value of the said probability
reaches the figure of 5/100 or 0.05.

Pamirs to the Arabian Sea and to Krishna river in South India. Its settlements, as well as the cities of Harappa and Mohenjo daro, were flourishing some millennia before any Aryans-speaking people has entered India, an event which took place about the middle of the II millennium. At about this time the civilization seems to interrupt itself, and from that time onwards there is a dark period. Converging elements have surely caused its disappearance, as great floods of the rivers Ravi and Indus, and clash and wars between these populations and the Aryan-speaking tribes. Some scholars, basing themselves on the comparative variability of some skulls found in the various settlements, advanced the thesis that there was a composite population represented by a certain number of types, even attributing them to so-called races Alpine, Armenoid, Proto-Dravidian, Australoid, and even to Nordic. My study and examination of the skeletal remains, but particularly the result of the biometrical calculation of data, lead me to oppose it totis viribus. There is sufficient corroboration of the degree of somatic homogeneity; the tests of intra- and inter-group somatic variability prove a rather good uniformity. I consider this population as the eastern branch of the Asian Proto-Mediterraneans.

Discussion of data and conclusions

I give in the next lines some essential data for each Regional Type:

Troad. This Type is represented by 35 adult skulls found in the settlements of Hanai Tepe (15), Hissarlik (12), Kum Tepe (4), Müskebi (3), and Baba Köy (1). They belong to a period from approximately 3200 to 1500 B. C. I assign them with much caution: two to Late Neolithic, nine to Copper Age, 5 to Early Bronze, and 19 to Recent Bronze.

Anatolian. This Type is represented by 93 adult skulls found in the settlements of: Alishar Höyük (27), Osmankayasi-Boghaz Köy (16), Alaca Höyük (13), Tilki Tepe (12), Sheyh Höyük (5), Kusura (5), Ahlatli Bel (5), Yümük Tepe (3), Polatli Höyük (2), Altin Tepe (2), Büyük Gülücek (1), Acem Höyük (1), and Evdi

Tepesi (1). They belong to a period from approximately 3750 to 1300 B. C. (but the skulls of Altin Tepe are much older). I assign them with much caution: eleven to Late Neolithic, 47 to Copper Age, three to Early Bronze, and 32 to Recent Bronze.

Syro-Palestinian. This Type is represented by 78 adult skulls found in the settlements of: Ras Shamrah-Minet el-Beida (33), Megiddo (32), Byblos (10), and Kafer edj-Djarra (3). They belong to a period from approximately 3000 to 1500 B. C. I assign them with much caution: ten to Late Neolithic, 18 to Copper Age, and 50 to Recent Bronze.

Mesopotamian. This Type is represented by 56 adult skulls found in the settlements of: Kish (22), Ur (14), al'Ubaid (12), Tepe Gawra (4), Assur (3), and Jemdet Nasr (1). They belong to a period from approximately 4800 to 1500 B. C. I assign them with much caution: 28 to Late Neolithic, nine to Copper Age, nine to Early Bronze and ten to Recent Bronze.

Iranian. This Type is represented by 189 adult skulls found in the settlements of; Tepe Hissar (156), Tepe Siyalk (14), Shah Tepe (11), Hasanlu (5), and Luristan — Tepe Bad Hora, Tepe Giyan, Tepe Jamshidi — (3). They belong to a period from approximately 4100 to 2000 B. C. I assign them with much caution: 32 to Late Neolithic, 144 to Copper Age, and 13 to Early Bronze.

Turkmenian. This Type is represented by 77 adult skulls found in the settlements of: Kara Tepe-Geoksur (37), Koktcha (28), Takhirbay (3), Serakhs (2), Namazga Tepe (2), Anau (2), Tupkhona (1), Choust (1), and Vuadil (1). They belong to a period from approximately 4000 to 1200 B. C. (the Anau skulls are surely older). I assign them with much caution: 39 to Late Neolithic, four to Early Bronze, and 34 to Recent Bronze.

Indian. This Type is represented by 103 adult skulls found in the settlements of: Harappa (64), Mohenjo daro (12), Langhnaj (8), Lothal (8), Nevasa (4), Gedrosia (2), Chanhu daro (1), Chandoli (1), Nal (1), Sialkot (1), and Quetta (1). They belong to a period from approximately 3000 to 1500 B. C. I assign them with much caution: 92 to Copper Age, 10 to Early Bronze, and one to Recent Bronze.

Summing up I indicate the essential data as follows:

Regional Types	N	Skulls				Approx. period B.C.
		Late Neol.	Copper A.	Early B.	Recent B	
Troad . . .	35	2	9	5	19	3200–1500
Anatolian . .	93	11	47	3	32	3750–1300
Syro-Palestinian	78	10	18	—	50	3000–1500
Mesopotamian .	56	28	9	9	10	4800–1500
Iranian . . .	189	32	144	13	—	4100–2000
Turkmenian . .	77	39	—	4	34	4000–1200
Indian . . .	103	—	92	10	1	3000–1500
Total .	631	122	319	44	146	4800–1200

I indicate in Table 1 the values of a few constants for the essential characters of each Regional Type.

The Asian Proto-Mediterraneans, owing to the enormous area of residence and many millennia of development, show a certain degree of somatic variability in their skeletal remains. It is evident that such differences have great importance, particularly when, in some settlements, there were two or more series of skulls of various chronological levels. I studied this problem and made appropriate comparisons. The phenotypical differences found for each level were for the most part negligible, apart the increasing value of the cranial index (and its two terms) due to the brachycephalization process. The result of this examination shows a continuity of the somatic characteristics of the local populations, which is a proof of both uninterrupted settlement and genetic homogeneity (no immigration). In these small populations or tribes isolation has greatly favoured the reduction of variability. In fact there is in my opinion, a direct relation between genetic isolation and demo-genetic homogeneity and, on the other hand, between specialization of the environment (progressive culture) and characterization of the physical aspect of the population whose size has a decisive importance; the smaller it is, the swifter is the reduction of its somatic variability.

TABLE 1 — The seven Regional Types of the Asian Proto-Mediterraneans

Martin	Troad			Anatolian			Syro–Palestinian			Mesopotamian			Iranian			Turkmenian			Indian		
	N	A	SD.	N	A	SD.	N	A	SD.	N	A	SD.	N	A	SD.	N	A	SD.	N	A	SD.
1	19	186.0	9.3	52	184.5	7.8	29	183.6	7.0	27	188.5	7.5	121	189.1	6.4	30	180.1	11.6	46	187.2	7.5
	14	183.6	6.6	32	178.1	6.8	34	179.0	5.1	16	182.3	7.9	57	179.9	6.2	38	183.1	7.5	48	179.7	5.7
8	13	141.1	7.3	52	140.6	5.3	30	139.7	5.2	28	136.8	5.4	121	134.4	5.1	30	135.7	6 4	44	136.0	5.1
	20	138.5	7.2	32	136.0	6.4	34	135.3	5.6	17	134.2	5.7	56	132.9	4.6	38	134.4	5.9	40	131.8	7.1
20	10	118.2	3.8	45	113.7	3.8	6	112.0	7.1	23	118.0	4.2	114	116.0	4.3	21	117.7	5.8	40	117.1	5.2
	4	117.0	4.1	23	109.2	5.7	2	100.0	1.4	17	113.8	5.1	49	112.0	4.1	27	115.6	5.2	39	111.3	5.3
17	10	137.4	4.8	26	133.4	5.7	19	131.8	7.3	12	136.4	7.1	101	135.2	5.2	15	138.3	6.9	35	134.4	4.6
	3	134.0	5.3	5	130.0	5.5	20	129.3	6.9	7	130.0	7.2	42	129.0	4.1	22	136.4	7.1	33	128.6	6.3
48	6	68.3	4.5	26	67.9	4.2	17	67.3	4.4	13	70.3	5.8	116	70.9	5.1	30	70.4	5.4	38	69.7	4.3
	3	63.7	4.2	9	65.4	3.4	13	68.5	4.9	5	64.4	1.4	47	67.1	3.9	37	68.5	3.3	34	63.6	4.3
45	6	131.2	3.2	27	129.2	4.5	18	130.8	6.8	15	129.5	4.9	105	128.0	6.2	30	129.7	6.4	22	130.1	6.2
	3	123.3	10.1	15	118.9	3.9	18	125.4	5.8	5	120.0	5.6	39	121.6	4.7	36	127.0	7.3	21	122.5	4.6
55	6	51.8	3.2	25	50.6	3.6	17	50.6	3.2	15	53.2	2.7	112	51.1	3.6	27	50.7	2.7	41	51.0	3.3
	3	47.0	3.6	9	48.1	2.9	13	50.4	4.2	6	47.0	2.8	46	48.6	3.0	31	49.8	2.5	45	46.6	3.5
54	6	23.6	0.8	26	25.3	1.9	17	24.5	2.3	16	25.6	2.0	106	25.3	1.9	27	25.6	1.8	42	25.9	2.1
	3	23.7	1.2	11	23.7	1.9	13	24.0	1.7	10	23.8	1.0	43	24.3	1.7	31	24.3	2.1	42	24.3	2.1
I 1	12	74.8	6.1	54	76.3	4.2	35	75.5	3.8	28	72.6	3.7	127	71.5	3.2	30	71.8	5.0	44	72.8	4.3
	18	75.3	3.2	36	76.7	4.5	39	75.2	4.1	17	74.9	4.2	60	73.8	3.1	38	73.4	3.8	38	73.6	4.2
I 39	6	53.0	3.6	25	53.2	4.4	16	52.1	2.3	12	54.2	5.4	102	55.1	4.0	30	54.8	4.9	22	53.5	5.2
	3	52.0	7.2	10	54.0	2.9	14	55.2	2.1	4	52.7	2.8	39	55.3	3.1	35	54.2	4.0	17	52.7	3.2
I 48	6	45.5	3.3	22	49.1	4.0	16	47.6	3.3	15	48.5	4.2	111	50.3	4.4	29	50.1	3.9	41	50.8	4.4
	3	50.7	2.6	10	49.2	1.4	12	48.1	3.1	6	50.3	3.8	45	49.5	3.7	36	48.7	4.6	41	52.0	4.3

For each character the first horizontal line-values concern male skulls, the second one female skulls

I considered for comparison eleven essential characters, arranged in logical couples as follows: a) the two cranial measurements, length and breadth and their index (Martin's numbers 1, 8, I 1); b) the two vault heights, auricular and basibregmatic (M 20-21, 17); c) the two face-measurements, upper facial height and bi-zygomatic breadth, and their index (M 48, 45, I 39); d) the two nasal measurements, height and breadth of the apertura piriformis, and their index (M 55, 54, I 48). To make comparisons more precise and indicative I calculated and used inter-sex values of means and SDs., because the sex-diagnosis is generally uncertain (vide Table 2).

I indicate in the following table the mutual differences of mean in «discrete» figures:

Regional Types	Characters : Martin's numbers										
	1	8	20	17	48	45	55	54	I 1	I 39	I 48
Troad against Anatolian	2.6	0.7	5.7	3.8	0.5	3.1	0.2	1.3	1.4	0.9	1.9
Syro-Palestinian	3.6	2.1	8.9	6.1	1.0	0.5	0.3	0.7	0.4	0.9	0.6
Mesopotamian	1.5	3.7	1.7	2.5	1.9	1.5	1.2	1.3	1.5	1.2	1.8
Iranian	0.2	5.8	3.0	4.5	2.2	3.8	0.3	1.2	2.3	2.6	2.7
Turkmenian	1.2	4.5	1.4	0.5	2.6	0.4	0.0	1.2	2 3	1.9	2.1
Indian	1.2	5.6	3.7	5.1	0.1	2.3	1.4	1.5	1.8	0.5	4.2
Anatolian against Syro-Palestinian	1.0	1.4	3.2	2.3	0.5	3.1	0 5	0.6	1.0	0.0	1.3
Mesopotamian	4.1	3.0	4.0	1.8	1.4	1.6	1.4	0.0	2.9	0.3	0.1
Iranian	2.4	5.1	3.8	0.7	1.7	0.7	0.1	0.1	3.7	1.7	0.8
Turkmenian	3.8	3.8	4.3	4.3	2.1	2.5	0.2	0.1	3.7	1.0	0.2
Indian	1.4	4.9	2.0	1.3	0.6	0.8	1.2	0.2	3.2	0.4	2.3
Syro-Palestinian against Mesopot.	5.1	1.6	7.2	3.6	0.9	1.0	6.9	0.6	1.9	0.3	1.2
Iranian	3.4	3.7	5.0	1.6	1.2	3.3	0.6	0.5	2.7	1.7	2.1
Turkmen.	4.8	2.4	7.5	6.6	1.6	0.1	0.3	0.5	2.7	1.0	1.5
Indian	2.4	3.5	5.2	1.0	1.1	1.8	1.7	0.8	2.2	0.4	3.6
Mesopotamian against Iranian	1.7	3.1	2.2	2.0	0.3	2.3	1.5	0.1	0.8	1.4	0.9
Turkmenian	0.3	0.8	0.3	3.0	0.7	1.1	1.2	0.1	0.8	0.7	0.3
Indian	2.7	1.9	2.0	2.6	2.0	0.8	2.6	0.2	0.3	0.7	2.0
Iranian against Turkmenian	1.4	1.3	2.5	5.0	0.4	3.4	0.3	0.0	0.0	0.7	0.6
Indian	1.0	0.2	0.2	0.6	2.3	1.5	1.1	0.3	0.5	2.1	1.5
Turkmenian against Indian	2.4	1.1	2.3	5.6	2.7	1.9	1.4	0.3	0.5	1.4	2.1

These values are in mm. for the metrical measurements, and in «unities of index» for the three indices.

TABLE 2 — The seven Regional Types of the Asian Proto-Mediterraneans
Inter-sex values for the eleven essential characters

Martin	Troad			Anatolian			Syro-Palestinian			Mesopotamian			Iranian			Turkmenian			Indian		
	N	A	SD.	N	A	SD.	N	A	SD.	N	A	SD.	N	A	SD.	N	A	SD.	N	A	SD.
1	33	184.7	7.7	84	182.1	7.4	63	181.1	6.0	43	187.2	7.6	178	184.5	6.3	68	185.9	9.4	94	183.4	6.6
8	33	139.5	7.1	84	138.8	5.7	64	137.4	5.4	45	135.8	5.4	177	133.7	4.9	68	135.0	6.1	84	133.9	6.1
20	14	117.9	3.7	68	112.2	4.6	8	109.0	5.9	40	116.2	5.0	163	114.0	4.2	48	116.5	5.4	79	114.2	5.3
17	13	136.6	4.7	31	132.8	5.6	39	130.5	7.0	19	135.1	6.8	143	132.1	4.7	37	137.1	6.9	68	131.5	5.5
48	9	66.8	4.1	35	67.3	4.0	30	67.8	5.8	18	68.7	4.9	163	69.0	4.5	67	69.4	4.3	72	66.7	4.3
45	9	128.6	5.7	42	125.5	4.2	36	128.1	6.2	20	127.1	4.9	144	124.8	5.5	66	128.2	6.9	43	126.3	5.4
55	9	50.2	3.2	34	50.0	3.4	30	50.5	3.6	21	51.4	2.6	158	49.9	3.3	58	50.2	2.5	86	48.8	3.4
54	9	23.6	0.9	37	24.9	1.9	30	24.3	2.0	26	24.9	1.7	149	24.8	1.8	58	24.8	2.0	84	25.1	2.1
I 1	30	75.0	4.5	90	76.4	4.4	74	75.4	3.9	45	73.5	3.9	187	72.7	3.2	68	72.7	4.3	82	73.2	4.3
I 39	9	52.6	4.6	35	53.5	3.9	30	53.5	2.2	16	53.8	4.7	141	55.2	3.6	65	54.1	4.4	39	53.1	4.2
I 48	9	47.2	2.9	32	49.1	3.4	28	47.8	3.2	21	49.0	3.9	156	49.9	4.1	65	49.3	4.2	82	51.4	4.4

Most differences are practically negligible, as shown also by
the values of their SDs which I indicate as follows:

Martin's numbers (characters)

1	8	20	17	48	45	55	54	I 1	I 39	I 48
1.4	1.7	2.3	1.9	0.8	1.1	1.5	0.4	1.1	0.7	1.1

I calculated for the eleven essential characters nearly 3000
differences of mean between each Regional Type and the others,
in succession, and — for a large number of Local Types (settle-
ments) — between each Type and the others. Most differences
— 84.3 % — were «not-significant» ([1]); this is an additional impor-
tant evidence of the genetic and somatic homogeneity of these
Asian Proto-Pediterraneans.

I calculated also, for the various characters, the differences of
mean between each Type and the correspondent mean value of
the Asian skulls pooled together. The value of these differences
is also practically negligible, as shown by the following figures
(metrical measurements in mm. and indices in «unities of index».

Martin's numbers

1	8	20	17	48	45	55	54	I 1	I 39	I 48
1.5	1.9	2.2	2.1	0.9	1.2	0.5	0.4	1.3	0.6	0.9

Mean difference (measurements) mm. 1.3; mean difference
(indices) «unities» 0.9, with a SD. for the former 0.7, for the
latter 0.4.

I checked also the values of the measurements and indices
with the «Sigma-test» ([2]). All the mean values of the Regional

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([1])   Vide p. 87.
([2])   The Sigma-criterion or test (σ) derives from the concept that the
curve of the values of the characters of homogeneous biological unities is

Types fall with in the limits of Mean ± 1o of the Asion Proto-
Mediterranean Comp'ex (all skulls pooled together), which is a
further corroboration of my thesis.

I calculated afterwards all the indices of somatic variability:
a) within the Local Types, i. e. intra-group index; b) between
Local Types of the same Regional Type, and between Regional
Types, i. e. inter-group index. All the values I obtained indicate
modest rate of variability. In order to judge about the level of the
intra-group variability, I compared the single figures with a
standard series of inter-racial values which I calculated on some
very old or prehistoric series of skulls indicated by Hambly. These
standard intersex values are:

Martin's numbers

1	8	17	48	45	55	54	I 1	I 39	I 48
5.5	4.6	5.0	4.1	4.7	2.7	1.6	2.7	4.7	4.1

mean (measurements) mm. 4.0, (indices) «unities of index» 3.8.

The result of the comparisons shows a very close adaptation
to the standard figures.

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generally «normal» or «nearly normal»; in this case the area under the curve
indicates «probability», and 99.75 % of this area remains between the values
of three times the SD. (or σ) of the arithmetic mean (A) of the series. By con-
vention, therefore, it is assumed that a given value or a sample belongs to the
series when its value falls within its mean ± 3σ. i.e.A ± 3σ. There is also a
very useful index of dispersion — the oscillation field of the theoretical mean —
The narrower the field is, the more the two means — theoretical and observed —
meet each other or coincide. This field is formed by adding to or substracting
from the value of the arithmetic mean (A) the value of thrèe times its «probable
error» (PE), i.e. A ± 3PE. The theoretical mean has a probability of 95 % to
fall within these limits, and conversely, the observed mean has the same proba-
bility to fall into an interval of 3PE over or under the theoretical mean. I call
this field «Delta» (Δ).

The inter-groups index of somatic variability ([1]) shows strong homogeneity in all the Types, being particularly high in the Troad and Anatolian Types with a figure of 93.0.

All characteres show regular frequency distribution of their values, so that these can be represented by normal or nearly normal curves, as the following graphs show. The closeness with which the frequency polygon fits the normal curve gives a good estimate cf the homogeneity of the group for that character.

In the following table I give some essential data from the result of my calculations.

Regional Types	Percentage of skulls			Percentage of not-significant differences of mean	Indices of somatic variability	
	Dol-	Meso-	Brachy		Within the Type	Between Types
Troad . .	55.2	24.1	20.7	81.0	4.5	92.9
Anatolian . .	46.9	32.8	20.3	83.3	4.4	92.9
Syro-Palestinian	44.6	46.0	9.4	88.6	4.7	89.4
Mesopotamian .	67.4	21.7	10.9	82 5	4.7	81.8
Iranian . . .	81.1	17.3	1.6	81.7	4.2	85.7
Turkmenian . .	66 2	29.4	4.4	89.6	5.1	88.5
Indian . . .	65.9	25.6	8.5	83.7	4.7	79.0

All the evidence and anthropometrical data collected up to now prove that at the end of the Neolithic time and before the Iron Age a branch of the Mediterranean Race inhabited Western Asia, from Aegean Sea to Bengal, and from Caspian Sea to Krishna river in Deccan, and that they were the only inhabitants of this enormous territory.

([1]) The analysis of variance permits us to calculate the level of variability, as in the following paradigm:

Source of variability	Sum of squares	Degree of freedom (n)	Variance estimate
Within samples, i. e. intra-group v.	a	b	$a/b = w$
Between samples, i. e. inter-group v.	c	d	$c/d = z$

MÁRIO CAPPIERI

MAXIMUM LENGTH (inter-sex)
N 208 A 188.4 σ 6.9 n 15 χ^2 6.2
P 0.97

MAXIMUM BREADTH (inter-sex)
N 200 A 136.4 σ 6.0 n 15 χ^2 14.3
P 0.50

AURICULAR HEIGHT
(inter-sex)
N 177 A 115.9 σ 4.6 χ^2 8.1
P 0.86

BASIBREGMATIC HEIGHT
(inter-sex)
N 145 A 135.5 σ 5.6 n 12 χ^2 16.6
P 0.17

MÁRIO CAPPIERI

UPPERFACIAL HEIGHT
(inter-sex)
N 163 A 70.7 σ 5.1 n 11 $\chi^2_{17.5}$
P 0.10

BI-ZYGOMATIC BREADTH (inter-sex)
N 155 A 128.5 σ 6.2 n 16 χ^2 10.6
P 0.83

NASAL HEIGHT (inter-sex)
N 161 A 51.0 σ 4.0 n 10 χ^2 10.9
P 0.37

NASAL BREADTH (inter-sex)
N 155 A 26.2 σ 1.9 n 10 χ^2 2.5
P 0.99

CRANIAL INDEX (inter-sex)
N 221 A 72.6 σ 3.9 n 20 x^2 16.4
P 0.69

UPPER FACIAL INDEX
(inter-sex)
N 147 A 54.8 σ 4.1 n 19 x^2 0.70
P 0.30

NASAL INDEX (inter-sex)
N 161 A 50.0 σ 4.5 n 20 χ²·24.3
P 0.23