TABLE 4

Age Distribution of Deaths in the United States (from selected causes). Both Sexes. Calculated from: Deaths and death rates for selected causes by age, race and sex: United States, 1940. Bureau of the Census. Department of Commerce. Vital Statistics- Special Reports, vol. 15, no. 1, April 15, 1942.

	0-9 yrs.	10-14 yrs.	15-19 yrs.	20-39 yrs.	40-59 yrs.	60 – x yrs.	Not Stated	Number of Individuals
Whites	118 493 (9.6)	9425 (0.7)	15678 (1.2)	98669 (8.0)	269926 (21.9)	717870 (58.3)	1162 (0.09)	1231223
Negroes	26862 (15.0)	2120 (1.1)	5201 (2.9)	34877 (19.5)	55054 (30.8)	54109 (30.2)	520 (0.2)	178743
Other Races	1877 (25.7)	138 (1.8)	289 (3.9)	1229 (16.9)	1598 (21.8)	2152 (29.4)	20 (0.2)	7 303

TABLE 5

Sex Difference in the Age at Death in the United States, 1940. Calculated from: Deaths and Death Rates for Selected Causes by Age, Race and Sex: United States, 1940. Bureau of the Census. Department of Commerce. Vital Statistics-Special Reports, vol. 15, no. 21, April 15, 1942 *

	Sex	10-14 yrs.	15-19 yrs.	20-39 yrs.	40-59 yrs.	60 – x yrs.	Number of Individuals
Whites	♂	5580 (0.8)	9264 (1.4)	55887 (8.9)	165 761 (26.6)	385984 (62.0)	622476
	♀	3845 (0.7)	6414 (1.3)	42782 (8.7)	104165 (21.2)	331886 (67.8)	489092
Negroes	♂	1115 (1.3)	2327 (2.9)	17547 (21.8)	29724 (37.0)	29514 (36.7)	80227
	♀	1005 (1.4)	2874 (4.0)	17330 (24.3)	25330 (35.6)	24595 (34.5)	71134
Other Races	♂	63 (1.7)	144 (4.0)	713 (20.0)	1159 (32.5)	1483 (41.6)	3562
	♀	75 (4.0)	145 (7.8)	516 (27.9)	439 (23.8)	669 (36.2)	1 844

* 0-9 years have been subtracted from the tables.

A FURTHER NOTE ON THE PALAEOLITHIC SHANIDAR INFANT

MUZAFFER ŞENYÜREK

Since my preliminary report was printed in this issue of Anatolia,[1] I have been able to subject the differences between the measurements and indices of the deciduous teeth of the Shanidar infant and those of the Neanderthalians and modern Man to a statistical analysis and have further compared the teeth with the photographs of the milk teeth of the so far briefly reported[2] Neanderthal child from Pech de l'Aze.[3]

The measurements and indices of the upper and lower deciduous teeth of the Shanidar infant are listed in tables 1 and 2. As was stated before the robustness values (length × breadth) of the deciduous teeth of the Shanidar infant are smaller than those of the Neanderthalians, except in three teeth and are in the range of those of modern Man.[4] Again as was recorded before most of the deciduous teeth have higher height-length indices than those of the Neanderthalians and thus resemble those of the modern Man.[5] However, while most of the deciduous teeth of the Shanidar infant are smaller and relatively higher than those of the Neanderthalians, a statistical study of the measurements and indices showed that only a few of the differences between the Shanidar infant and the Neanderthalians from Europe and Palestine are statistically significant.[6] A comparison of the measurements and indices of the deciduous teeth of the Shanidar

[1] Şenyürek, 1957.

[2] See Vallois, 1953, p. 150.

[3] On this occasion I wish to extend my thanks to Prof. Dr. H. V. Vallois for having kindly sent to me two photographs of the fossil child from Pech de l'Aze, showing the upper and lower teeth in occlusal view, together with the measurements of the teeth, and for his permission to use them.

[4] See Şenyürek, 1957, p. 50

[5] *Ibid.*, p. 50.

[6] The measurements and indices contrasted are: length, breadth, height, robustness value, crown index, height-length index and height-breadth index.

infant with those of a series of ancient Anatolians I have recently studied yielded significant differences in only two cases. However, in one of these (robustness value of dm_1) the Shanidar infant does not differ significantly from the robustness value of a small series of Kaffir and Bushmen children, I have calculated from the measurements given by Broom [7] and in the other (length of dc_1), according to the standard deviation I have computed from the range given by Abel,[8] it does not differ significantly from a series of Bushmen, Hottentots and Negroes measured by Abel [9] and is furthermore in the range of modern Man. [10] Thus in the two points, where there is a significant difference with the ancient Anatolians, the Shanidar infant does not differ significantly from some other groups of modern Man.

As the morphology of the teeth have been described, although briefly, in my previous report, I will here dwell only on some additional points that have a bearing on the systematic position of the Shanidar infant.

The lower deciduous incisors of the Shanidar infant differ from those of the norm for modern Man in having the mesial and distal sides, in buccal or lingual view, nearly parallel while in modern Man these two sides usually converge from the cutting edge toward the root. As far as can be judged from the photograph, mesial and distal sides of the lower central deciduous incisor and perhaps also those of the lower lateral deciduous incisor of the child from Pech de l'Aze come close to those of modern Man in this respect.

The lower deciduous canine of the Shanidar infant differs from that of the child from Pech de l'Aze in having a distal tubercle, which is missing in this fossil child from France. On the lingual surface of the lower deciduous canine of the Shanidar infant the median ridge is in the form of a broad and elevated platform that is separated from the mesial and distal margins of this surface by deep grooves. The morphology of the lingual surface of the lower deciduous canine of Shanidar infant differs from that of *Pithecanthropus pekinensis* [11] and

[7] See Broom, 1946, p. 111.
[8] See Abel, 1933, Table 1.
[9] *Ibid.*
[10] See the figures of De Terra, cited by Abel, 1933, table 1.
[11] See Weidenreich, 1937, pl. XXI, figs. 188, 190 and 191.

also from that of the child from Pech de l'Aze, in the latter this surface being celearly excavated, that is shovel-shaped. The morphology of the lingual surface of the lower deciduous canine of the Shanidar infant is occasionally approximated in modern Man, but in the examples I have seen the formations described are weaker.

In the upper first deciduous molar of the Shanidar infant the long axis of the chewing surface is not perpendicular to a transverse line drawn between the most prominent points of paracone and protocone, respectively in buccal and lingual directions, but conspicuously oblique to it. This peculiaty of the upper first deciduous molar of the Shanidar infant is also seen in the corresponding teeth of the Neanderthal children from Engis,[12] Pech de l'Aze and to a lesser extent in the Gibraltar child [13] and differs from the norm for modern Man in which the antero-posterior axis is either perpendicular to the transverse line mentioned or only slightly oblique. In this feature the upper first deciduous molar of Skhūl I child differs from that of Shanidar infant and other Neanderthal specimens mentioned and resembles that of modern Man.[14] The course of the oblique ridge of the upper first deciduous molar of the Shanidar infant described in my earlier report [15] is approached by those of the Neanderthal children from Engis [16] and Pech de l'Aze while that of the Skhūl I specimen [17] resembles that of the upper first deciduous molars of modern Man outlined in my earlier report.[18] However, the upper first deciduous molar of the Shanidar infant differs from those of the Neanderthal children from Engis,[19] Gibraltar[20] and Pech de l'Aze in having a well developed hypocone which seems to be lacking in these Neanderthalians. In having a well formed hypocone this tooth of the Shanidar infant also differs from that of Skhūl I specimen, in which the

[12] See Fraipont, 1936, pl. III, fig. 14.
[13] See Buxton, 1928, pl. IV, fig. B.
[14] See McCown and Keith, 1939, pl. XIV, fig. 7.
[15] See Şenyürek, 1957, pp. 51-52.
[16] See Fraipont, 1936, pl. III, fig. 14.
[17] See McCown and Keith, 1939, fig. 139A and pl. XIV, fig. 7.
[18] See Şenyürek, 1957, pp. 51-52.
[19] See Fraipont, 1936, pl. III, fig. 14.
[20] See Buxton, 1928, pl. IV, fig. B.

hypocone is represented by a thickened part of the distal marginal ridge[21] as sometimes also occurs in modern Man.

In the lower first deciduous molar of the Shanidar infant the *tuberculum molare* is weakly developed in both the buccal and lingual directions. From the statements of Gorjanović-Kramberger[22] and Weidenreich[23] it also appears that this formation is weak in respectively the Krapina and Gibraltar Neanderthalians. In the modern Man the development of the *tuberculum molare* is variable, being weak in some specimens, as in the Shanidar infant, while it is more strongly developed in others. The lower first deciduous molar of the Shanidar infant exhibits a reduced form of Dryopithecus pattern. A similar reduced Dryopithecus pattern is also seen in some lower first deciduous molars of modern Man, who is however variable in this respect, some specimens possessing a well developed Dryopithecus plan with a broad contact between the hypoconid and metaconid.

The upper second deciduous molar of the Shanidar infant, in having a nearly square shape with paracone projecting in buccal direction only very slightly more than the metacone, comes close to those of the Neanderthal children from Gibraltar[24] and Pech de l'Aze and differs from the norm for modern Man in whom this tooth usually exhibits a rhomboidal shape with paracone projecting considerably more in buccal direction than the metacone. In this tooth of Skhūl I specimen the paracone appears to project more in buccal direction than is the case in Shanidar infant.[25] In having a flat buccal portion the mesial marginal ridge of the upper second deciduous molar of the Shanidar infant resembles that of the child from Pech de l'Aze but differs from that of Skhūl I specimen in which this part is convex[26] as is usually the case in modern Man.[27] The order of

[21] See McCown and Keith, 1939, fig. 139A and pl. XIV, fig. 7 and pp. 303-304.

[22] See Gorjanović-Kramberger, 1906, p. 184.

[23] See Weidenreich, 1937, p. 115.

[24] See Buxton, 1928, pl. IV, fig. B.

[25] See McCown and Keith, 1939, pl. XIV, fig. 8.

[26] See *ibid.* In this connection it is of interest to note that the morphology of the upper first and second deciduous molars of the Mousterian or Neanderthaloid infant from Shanidar cave comes closer to those of the classical Neanderthalians of Europe than to those of the Neanderthalians from Palestine.

[27] For modern Man see Jorgensen, 1956, p. 125.

the relative size of the cusps in the upper second deciduous molar (protocone > metacone > paracone > hypocone)[28] of Shanidar infant resembles the order of the relative size of the cusps in the upper first and second permanent molars of *Pithecanthropus pekinensis*[29] and differs from those of the majority of the upper second deciduous molars of the Danes[30] and the ancient Anatolians.

As has already been described, when the lower second deciduous molar of the Shanidar infant is examined in occlusal view it is seen that all four corners of the tooth are rounded, the mesial and distal sides are short and convex and the buccal and lingual sides are conspicuously convex.[31] The contour of this tooth of Shanidar infant is approximated by those of the Neanderthal children from Engis[32] and Pech de l'Aze and differs from the norm for modern Man. In the lower second deciduous molar of the Shanidar infant the tip of protoconid, in the buccal view, is conspicuously higher than that of the hypoconid, which is a primitive feature.[33] The difference between the levels of the tips of protoconid and hypoconid in this tooth of the Shanidar infant is much more than that which I have observed in the corresponding teeth of the ancient Anatolians in whom either the tips of the two cusps are on the same level or the protoconid is only slightly higher than the hypoconid. In this feature the lower second deciduous molar of the Shanidar infant approaches a fossil lower second deciduous molar from Salmendingen that is generally attributed to *Dryopithecus rhenanus* Pohlig.[34] The lower second deciduous

[28] As was stated before, paracone is only slightly bigger than the hypocone (see Şenyürek, 1957, p. 52).

[29] See Weidenreich, 1937, p. 62.

[30] See Jorgensen, 1956, pp. 124-126.

[31] Şenyürek, 1957, p. 53.

[32] See Fraipont, 1936, pl. III, fig. 16.

[33] See Gregory, 1920, p. 711, and Şenyürek, 1951, pp. 459 and 466.

[34] See Schlosser 1902, pl. I, fig. 14a, and Gregory, 1920, fig. 287, B^2. In this connection it may be mentioned that in the lower second deciduous molar No. 139′ of *Pithecanthropus pekinensis* illustrated by Weidenreich (1937, pl. XXXVI, fig. 344b) the restored tip of the much worn protoconid is shown as being conspicuously higher than the tip of hypoconid as in the Shanidar infant. However, as I stated previously (Şenyürek, 1951, pp. 459-460) judging by, relatively speaking, the better preserved specimen No. 128 (see Weidenreich, 1937, pl. XXII, fig. 202b) the tip of the protoconid of this tooth of *Pithecanthropus pekinensis*, although still higher,

molar of the Shanidar infant possesses a reduced and modified Dryopithecus pattern, as occurs in some specimens of modern Man. However, the lower second deciduous molars of modern Man are variable in this regard, some specimens exhibiting Dryopithecus pattern (both typical and reduced forms), some Hellman's (+) pattern[35] and some, what I have called in permanent lower molars the "protoconid-entoconid connection".[36]

The accounts given in the previous report and the present note show that the deciduous teeth of the Mousterian infant from the Shanidar cave, as has already been noted, possess some features found in Neanderthal man, some in modern Man as well as some traits that are primitive or specialized.[37] While the deciduous teeth of this Mousterian or Neanderthaloid infant from the Shanidar cave share a number of characters in common with the Neanderthal man and some with modern Man, she also possesses features that distinguish it not only from the Neanderthalians of Europe and the advanced Neanderthalians of Palestine but also from modern Man.

The Mousterian or Neanderthaloid infant from the Shanidar cave belongs to the species *Homo sapiens*, together with the Neanderthalians from Asia, Europe and North Africa and the ancient and living races of modern Man.[38] However, the features in which the deciduous teeth of this Neanderthaloid infant differ from those of the Neanderthalians indicate that Shanidar infant, or Shanidar form,

was probably not so much higher than the tip of hypoconid as is indicated in Weidenreich's restoration. As for the Neanderthalians, the lower second deciduous molar of the Gibraltar child is worn, but still in the drawing published by Weidenreich (1937, pl. XXII, ig. 209) the protoconid is seen to be somewhat higher than the hypoconid, which is a primitive feature. However, as this tooth is worn it cannot be determined whether the difference between the heights of protoconid and hypoconid, before the onset of attrition, was as great as that of the Shanidar infant. Although, the available teeth of *Pithecanthropus pekinensis* and Gibraltar child are not fresh, still they indicate that in these hominids the protoconid of the lower second deciduous molar was at least somewhat higher than the hypoconid; that is, a primitive condition

[35] See Hellman, 1928, pp. 164-165.

[36] Şenyürek, 1952a, p. 184, and 1952b, p. 61.

[37] Şenyürek, 1957, p. 54.

[38] For the inclusion of Neanderthal man in the species *Homo sapiens* see : Dobzhansky, 1944 and 1955, Mayr, 1950, and Şenyürek, 1957.

is the representative of a new race of the Neanderthal group,[39] that at the same time appears to have been closely related to the direct ancestors of modern Man . I propose to name this new Mousterian race, represented by the Shanidar infant, *Homo sapiens shanidarensis*, after the cave in which it was found.

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[39] Regarding the Neanderthalians, I made the following statement in my earlier report (Şenyürek, 1957, p. 55): "*Therefore, there are indications that there were more than one subspecies in this ancient group of* Homo sapiens." In other words, there are indications that the Neanderthalians from Asia, Europe and Africa represent a subspecies group of the species *Homo sapiens*, as has already been suggested by Mayr (see Mayr, 1950, p. 115).

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TABLE 1

Measurements and Indices of the Upper Deciduous Teeth of Shanidar Infant

	Length (Mesio-Distal)	Breadth (Bucco-Lingual)	Height (Crown)	Robustness Value [1]	Crown Index [2]	Height-Length Index [3]	Height-Breadth Index [4]
di^1	7.40	5.90	7.40	43.66	79.72	100.00	125.42
di^2	5.70	5.30	6.80	30.21	92.98	119.29	128.30
dc^1	7.20	6.90	7.80 (left)	49.68	95.83	108.33	113.04
dm^1	7.50	8.80	6.30	66.00	117.33	84.00	71.59
dm^2	8.90	9.80	6.00	87.22	110.11	67.41	61.22

[1] Robustness Value = Length × Breadth.

[2] Crown Index $= \frac{\text{Breadth} \times 100}{\text{Length}}$.

[3] Height-Length Index $= \frac{\text{Height} \times 100}{\text{Length}}$.

[4] Height-Breadth Index $= \frac{\text{Height} \times 100}{\text{Breadth}}$.

TABLE 2

Measurements and Indices of the Lower Deciduous Teeth of Shanidar Infant

	Length (Mesio-Distal)	Breadth (Bucco-Lingual)	Trigonid Breadth	Talonid Breadth	Height (Crown)	Robustness Value	Crown Index	Trigonid-Talonid Index [1]	Height-Length Index	Height-Breadth Index
di_1	4.60	4.60	—	—	6.60	21.16	100.00	—	143.47	143.47
di_2	5.20	4.90	—	—	7.40	25.48	94.23	—	142.30	151.02
dc_1	6.80	—	—	—	7.00+	—	—	—	102.94+	—
dm_1	8.70	7.50	7.50	7.00	6.90	65.25	86.20	93.33	79.31	92.00
dm_2	10.00	9.10	8.90	9.10	—	91.00	91.00	102.24	—	—

[1] Trigonid - Talonid Index $= \frac{\text{Talonid Breadth} \times 100}{\text{Trigonid Breadth}}$.

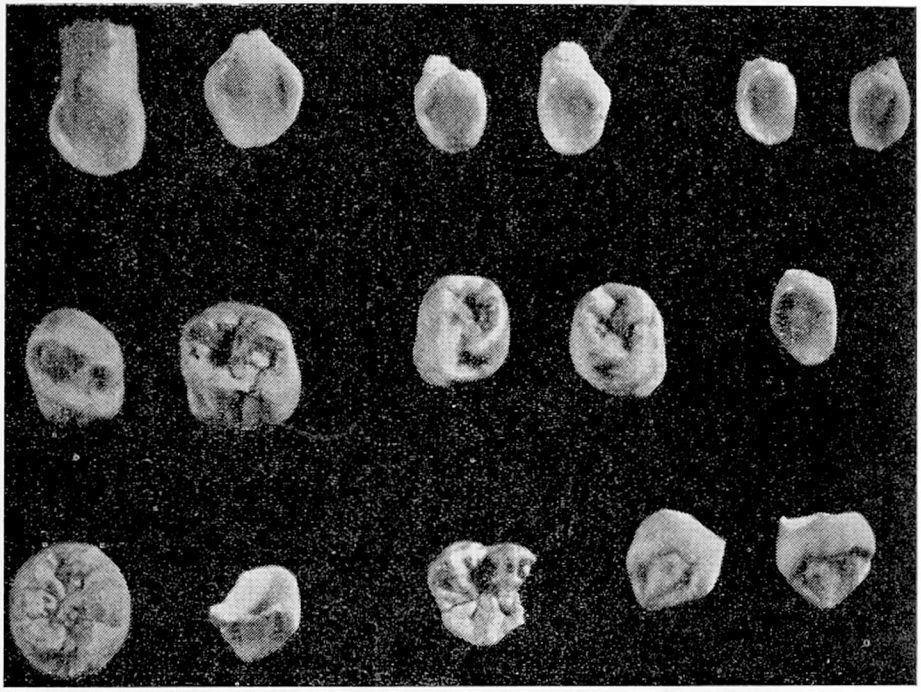

Fig. 1. The preserved teeth of the Shanidar infant. The tooth in the middle of the bottom row is the left upper first permanent molar, all the others being deciduous teeth. Enlarged about 1.7 times.

In this connection I wish to express my thanks to the General Directorate of Antiquities of Iraq, the Iraq Museum and to Mr. Antran Evan, photographer of the Iraq Museum, for this photograph and the other photographs that will be published in my coming detailed report.