

6 months of this regime the group was bred, and the offspring in turn raised and bred on the C-deficient diet. Of the 3 generations so obtained, the lower incisors were examined histologically for evidence of scurvy. The average ages of the f_0 , f_1 , f_2 groups were respectively 12 to 15, $5\frac{1}{2}$, and 2 months. In no instance did the sections show any deviations from the normal tooth structure. The organization of the odontoblasts, the process of dentine formation and the vascularity and cellular content of the pulp cavity were in no way disturbed. Furthermore, from gross examination the adrenals showed no signs of hypertrophy nor any diminution in the speed of reduction of silver nitrate (0.4% solution). Consequently there was no evidence reflecting a latent or early disturbance resultant from the continuous omission of vitamin C from the diet.

7847 P

Blood Grouping of the Rwala Arabs.

WILLIAM M. SHANKLIN. (Introduced by G. H. Miller.)

From the Department of Histology, School of Medicine, American University of Beirut, Syria.

Although many investigators have made blood typings on Asiatics in both the Near East and the Far East, no studies have been previously reported on the inhabitants of the Syrian desert. The subjects of this study all belong to the Rwala tribe whose customs and manners have been fully elucidated by Musil.¹ Being entirely nomadic and very powerful, the Rwala penetrate the deepest parts of

TABLE I.
Percentage of distribution of blood groups among Rwala Arabs.

Camp	No. Persons	% in each group				Frequencies			Racial Index
		O	A	B	AB	p	q	r	
1*	79	94.94	5.06	0	0	.21	.00	9.74	0
2	77	87.01	9.09	2.60	1.30	.54	.17	9.33	2.66
3	58	82.76	12.07	5.17	0	.63	.27	9.09	2.33
4	59	72.88†	13.56	11.86	1.69	.79	.68	8.53	1.12
5	47	63.83†	21.28	12.77	2.13	1.24	.76	7.99	1.57

* Since the Rwala are nomadic a camp number is designated instead of naming the locality.

† Decrease in O due to negro slave admixture.

¹ Musil, A., *The Customs and Manners of the Rwala Bedouins*. American Geographical Society, Oriental Explorations and Studies, No. 6, 1928.

the desert. Except for some admixture with their negro slaves, the tribe is relatively pure as they retreat into the inner desert in cases of outside invasion. The blood samples were collected and typed on the same day against sera from donors belonging to group A and B. All agglutinations were checked by microscopical observation.

The high percentage of group O among the Rwala is wholly unexpected and most striking. The decrease in O in some of the camps is in direct proportion to the amount of admixture with the negro slaves in those particular camps. Although those frankly negro were excluded from the series, half-breeds were included. No negroes were found in camps 1 and 2, whereas in camp 5, the headquarters of the emir, large numbers of slaves are present.

In surveys of the incidence of blood group frequencies among peoples of the Near East by Parr,^{2,3} the highest percentages for group O reported for Syrian Arabs is 37.82%; Palestinian Jews, 37.18%; Armenians, 28.14%; Turks, 36.8%; and Egyptians, 24.0%. The handbook of Steffan⁴ also shows that all other previously reported Asiatics have a low incidence of group O.

Snyder,⁵ on the basis of blood groups, divides mankind into 7 types, one of which is the Pacific-American. This type, in contradistinction to all the other types, is characterized by a high percentage of group O, being above 90% in many pure tribes of American Indians. Very obviously the Rwala are to be classed with the Pacific-American type, thereby raising the question concerning the significance of this relationship. Snyder⁵ says: "It has been assumed by most writers that the human race was originally all of group O, the factors A and B having arisen separately by later mutation." As the American Indians are very high in group O, it is generally conceded that they migrated from some part of Asia before the mutation of factors A and B. The writer suggests a similar explanation may also apply to the Rwala Arabs. The variation in the percentages of group O in the various camps in no way invalidates the results of this study, as the variations are obviously due to mixture with negro blood.

² Parr, L. W., *Am. J. Phys. Anthropol.*, 1931, **6**, 15.

³ Kappers, C. U. A., and Parr, L. W. *An Introduction to the Anthropology of the Near East*. 1934, Amsterdam.

⁴ Steffan, P. *Handbuch der Blutgruppenkunde*. 1932, Munich.

⁵ Snyder, L. H. *Blood grouping in relation to clinical and legal medicine*. 1929, Baltimore.