

## THE BLOOD GROUPS IN PORTUGUESE INDIA.

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THE blood groups may be considered as a differential character among the somatic characteristics of the human body, under the ethnological point of view.

The blood grouping represents an excellent test to the classification of the races of mankind.

It is based on the hemoagglutination, phenomenon which is a special quality, of blood yet not more than one special quality, hence one somatic characteristic only.

In the whole realm of anthropological distinctions, as wisely proved the Prof. Suk, of Brno, this one quality of blood has been extensively used with regard to its supposed racial significance.

It is true also, that, there is at present, other blood qualities not so well known because the blood grouping itself is not yet completely characterised and fully standardised.

According to the opinion of Prof. Thomsen, of Copenhagen, the existence of two A genes can be served to explain anomalous differences found in certain racial groups.

As the craniological characters only are not sufficient to define ethnic groups of the humanity, similarly the blood grouping, when considered isolately, is unable to characterise any family of the mankind.

Thus the results of the hemoethnological researches must be used as a supplement to the other anthropological features and measurements.

But, it must be emphasised, that there is no unanimity of opinion among the authors as far as concerns the interdependence of racial classification based on blood grouping and on morphological features.

It is also observed and demonstrated that some comparisons between blood groups and the usual physical traits, at present considered as suitable for racial classification, do not show any co-relation.

Numerous ethnic samples with their respective blood groups ethnographically quite separated, show among them a great identity or many resemblances ; and on the other side, human groups living in the same country and showing somatic equality of the anthropometric data do not show any identity with regard to their blood group percentages.

Concerning the blood grouping problem in the Portuguese India this paper is the first contribution for its scientific resolution.

My researches on this anthropological subject were made in 400 Maratha soldiers of the Gôanese garrison, and I have adopted for these investigations the Beth-Vincent's method, using the serums manufactured in the Institut Pasteur of Paris.

I have measured 162 of those Marathas in my laboratory at the Medical College of Nova-Gôa.

The percentages of the blood groups which I have observed among them are the following :

	Number of subjects	Percentages
A group	107	26,75 %
B group	136	34,00 %
A B group	40	10,00 %
O group	117	29,25 %

Hirszfeld's Index .. 0,84.

This index is higher than those found by the Drs. Hirszfeld, Malone, Lahiri, Bais and Verhöef.

Dr. Hirszfeld has found the index 0,56 in the Indian soldiers, observed by him at Salonica. Those soldiers, in number 1,000, were chiefly Sikhs and Goorkhas fighting against the Turkey army of Galepoli. If the Sikhs are of the white race the Goorkhas, inhabitants of the Népal, belong to the yellow race.

It seems to me that the Goorkhas were the cause of the low index attributed by Hirszfeld to the Indian troops of the English army of Dardanel.

The second study of the blood groups of Hindus has been made in the Dutch Indies by the Drs. Bais and Verhöef.

These researchers have examined 348 Kligalese or Tamils, immigrants proceeding from Ceylon and working in the sugarcane plantations of Sumatra. They found among them the following percentages: A group—23,0%; B group—31,6%; AB group—7,5% and O group 37,9%, resulting an index of 0,72.

This index is higher than that of 0,56 as we have seen, found by Dr. Hirszfeld, but lower than that of 0,84 which I have found here as the index of the Gōanese Marathas.

The third series of blood grouping investigations in India are the researches of Drs. Malone and Lahiri at the Pasteur Institute of Kasauli.

This large inquiry is also imperfect because it was not accompanied by the somatic measurements as the former ones were made without the support of the anthropometric data.

These authors—two microbiologists but not anthropologists—have observed 3·764 individuals belonging to all the principal ethnic groups of the Indian population and they write on this subject the following:

“If<sup>1</sup> the figures given in the column race index be examined, it will be seen that there is little relation between the race index and the anthropological characters, thus, for example, with the Dravidians and the Indo-Aryans, two totally different types with regard to physical characteristics.

“The Dravidian type has the highest frequency and the Turko-Iranian the lowest of B; the frequency of B decreases as we travel up the Ganges valley to the North-West Frontier; the Hindus of the United Provinces standing in an intermediate position between the Dravidians and Indo-Aryans in this regard.

“These findings are quite in accordance with what might be expected from the views expressed by Risley with regard to the origin and relationship of these types.

“The same order holds good for O and AB, the Dravidians having the lowest percentage of O and the lowest of AB. The frequency of A is also highest in the Dravidian and lowest (except for Hindus of the United Provinces) in the Turko-Iranian.

“The low frequency of B in those three races of India, with the control of British soldiers, confirm the findings of other workers with regard to the Asiatic peoples in general.”

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<sup>1</sup> “Distribution of blood groups in India,” by Drs. Malone and Lahiri in *The Indian Journal of Medical Research*, 1929, 966-967.

And the same workers, trying to justify the low frequency of A amongst Hindus of the United Provinces, have written the following :

“With<sup>2</sup> regard to the low frequency of A amongst Hindus from the United Provinces, a figure between those obtaining for Indo-Aryans and Dravidians might have been expected since the Hindus are an admixture of the two above races, but this is not the case ; no explanation of the discrepancy can be offered at present.”

After concluding my present work, I came with an excellent work on the same subject by my colleague Prof. Pacheco de Figueiredo<sup>3</sup> *Contribution to the study of blood groups in the Indians (Christians and Hindus of Gôa)*. For this purpose he examined 509 persons, 309 Christians and 200 Hindus and obtained the following results, which emphasise the results obtained by me, being more or less equals :

Christians			Hindus		
Groups	Examined	Percentages	Groups	Examined	Percentages
O	96	31,06	O	67	33,5
A	70	22,65	A	49	24,5
B	94	30,42	B	62	31,0
AB	49	15,85	AB	22	11,0
Index of Hirszfeld 0,83			Index of Hirszfeld 0,84		

He draws the following conclusions :

“It would be too early to draw any conclusion whatever from this work. However, it should be noted that, on the whole, the percentages of the different groups—Christians and Hindus—of Gôa is very much similar ; preponderating the O group and being followed according to the frequency by the groups B, A and AB, which fact is to be noted also in the Hindus of Ceylon (Bais and Verhöef). But, while in these the Hirszfeld index is inferior (0,71), that of the Christians (0,83) and of the Hindus (0,84) of Gôa

<sup>2</sup> *The Indian Journal of Medical Research*, 1929, 966-967.

<sup>3</sup> *Arquivos da Escola Medico-Cirurgica de Nova Goa*, 1935, Serie A, Fasc. 10°, pp. 2032-2036.

is almost equal to that obtained by Prof. Germano Correia in the Mahrattas (0,84).”

It seems to me that there are some facts inexplicable in the calculation of the Hirszfeld's index among the principal ethnic groups of the Indian population.

How can we consider the absolute equality of the same index between the Indo-Aryan and the Dravidians as they have been calculated by Drs. Malone and Lahiri?

It is impossible to admit that the index of the Hindus of the United Provinces can be lower than that of the Dravidians, because these inhabitants of India are quite more different from the white ethnic type than the Hindus of the Central Provinces, where we can find frequently human samples of the caucasian somatic type.

In other side, the blood grouping researches of Drs. Hirszfeld, Bais and Verhöef concerning Indian inhabitants without race distinctions and without the anthropometric data, cannot be considered scientifically as true and valuable.

Thus, in this condition, what can be done? A large anthropohematic inquiry, using the same methods and serums, made by anthropologists *double* of hematologists, researching simultaneously in different provinces of the Indian Empire, but always under the directives of a harmonic plan. All those blood grouping investigations must be accompanied by the somatic measurements and informations about the race, the caste and other ethnographic data.