it was kept constant for five minutes without the cane sugar showing any signs of melting; on raising the temperature further, it finally melted at 188° C. sharp.

A reference to a paper "The Melting Point of Sugar" by K. Sundera and A. Mircev[1] is here necessary. These authors determined the melting point of various sugars and found that the method of making the determination had a very great influence on the melting point; the difference may amount to as much as 25° C. in some cases. To see whether the same was true in the case of cane sugar, we determined its melting point under the following varying conditions:

(1) Keeping the tube in the bath from the beginning and heating it gradually to 188° C., total amount of time taken to raise the temperature from 150° C. to 188° C. being six minutes.

(2) Immersing the tube at 150° C. and then raising the temperature gradually to 188° C., stopping at 160° C. for five minutes, total time being seven minutes.

(3) Immersing the tube at 180° C. and then raising the temperature gradually to 188° C. stopping at 184° C. for two minutes, total time being four minutes.

The melting point found by us in all the above cases was 188° C. When the velocity of the rise of temperature was strictly maintained at 1 minute for ½° C., as recommended by Sundera and Mircev, in some cases there was softening at 184° C. though the sugar melted finally at 188° C.

This shows that the melting point of sucrose is independent of the variables, the total time of heating, the velocity with which the temperature of the sample is raised or the temperature of the surrounding bath and that it depends upon the purity of the sample alone.

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February 15, 1936.

[1] *Zeit. Zuckerind. Czech. Rep.*, 1934-35, **59**, No. 23, 204-206.

The Iso-Electric Point of Vitamin B_1.

IN a note on the iso-electric point of vitamin B_1, appearing in the February number of *Current Science* (p. 586), Mr. G. Narasimhamurti makes the following statements.—"Sankaran and De reported that the iso-electric point is in the acid range (pH 3·0) while Guha and his collaborators found it to be in the alkaline range at pH 8·5. These discordant results may be ascribed to the use of impure vitamin B_1 preparations; further, the values obtained were not confirmed by satisfactory biological tests." There are certain inaccuracies in these statements, which should be corrected. Firstly, Birch and Guha[1] did not state that the iso-electric point was at pH 8·5. They concluded from their experiments on concentrated yeast extracts that "vitamin B_1, behaves like a base even at pH 8·5, and, therefore, must be either a true base or an ampholyte whose iso-electric point is higher than pH 8·5." This conclusion was confirmed by Ghosh and Guha,[2] who found that the vitamin in a very concentrated fraction obtained from rice-polishings also migrated to the kathode at pH 8·2. We did not consider it worthwhile pursuing this question further and it was taken up only in view of Sankaran and De's observations. Secondly, some of the vitamin preparations used by us, although not pure, were highly concentrated and our results were invariably based on "satisfactory" biological tests carried out according to well-known standardised techniques and we had pointed out that Sankaran and De were perhaps misled by their reliance on chemical assay only. Mr. Narasimhamurti's present observations substantially confirming our earlier results are, however, to be welcomed.

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Indian Institute for Medical Research,
Calcutta,
March 6, 1936.

[1] *Biochem. J.*, 1931, **25**, 1391.
[2] *Curr. Sci.*, 1935, **3**, 554.

Preliminary Note on the Blood Groups of Some Cochin Castes.

AGGLUTINATION tests have been made upon out-patients at the General Hospital, Ernakulam, Cochin State, South India, with the co-operation of Dr. P. Narayan Menon. Test sera were obtained from the Haffkine Institute, Bombay, through the courtesy of the Director, upon the recommendation of

Professor R. R. Gates, F.R.S. The method followed was that given by Kolmer and Boener in *Approved Laboratory Technic*. Blood was taken from patients belonging to seventeen different communities; 300 blood samples were tested by the writer and 300 by Dr. Menon. The data for some important castes already reveal characteristics of sufficient interest to be recorded now, although we hope to obtain more. The data for a small sample of Tamils, which were obtained from various non-Brahmin castes are also given in the following table for comparison with the West Coast people:—

TABLE I.

Cochin Blood Groups by Castes (1935).

Caste and No. of subjects	Numbers belonging to groups			
	O	A	B	AB
Naiars—121	47 (38·8%)	43 (35·5%)	27 (22·4%)	4 (3·3%)
Syrian Christians—140	51 (36·4%)	37 (26·4%)	40 (28·6%)	12 (8·6%)
Izhuvans—132	77 (58·3%)	32 (24·2%)	16 (12·2%)	7 (5·3%)
Pre-Dravidian Tribes—50	26 (48%)	13 (30%)	6 (9%)	5 (12%)
Tamil Non-Brahmins—50 (Madras)	21 (42%)	14 (28%)	12 (24%)	3 (6%)

The Naiars are a mixed race from an original Dravidian (Melanid) stock now intermixed with Nambuthiri Brahmin genes.[1] They are a matriarchal community and high caste Naiars often have Brahmin fathers. The Syrian Christians are descended from Brahmins and Naiars who were converted to Christianity early in the Christian Era, perhaps about 300 A.D. These data show a higher proportion of B, the group of North India, among them than among the Naiars. Although this may be due to the size of the samples it will only be possible to judge the relative heterozygosity of these two communities after sufficient data have been obtained from Nambuthiris for comparison. The Dravidian group A is well represented in them both.

The Izhavans are a Dravidian caste who probably came to the Malabar Coast from Ceylon;[1] and they show a very low percentage of group B. A sample of only twenty-five of the Dravidian fisherman caste, Valans, indicates that they also have very little B. The Dravidian data from both coasts, although from small samples, are of interest because of the strong resemblance they bear to those of Heydon and Murphey for Melanesian Papuans (53·7% O, 26·8% A, 16·3% B, 3·2% AB),[2] as well as those of Bijlmer[2] for some tribes of the Halmaheira Islands of the Moluccas; a similarity that warrants further investigation. The consistently high proportion of Group I that we find among the lowest castes of Cochin indicates that they belong to a very ancient stock. The proportion of Group B is lower in the high caste non-Brahmins of Cochin than it is further north where B exceeds A. This is probably due to the original scarcity of agglutinogen B among the Pre-Dravidian and Dravidian people in South India.

Only fifty members of Pre-Dravidian tribes have been examined at Ernakulam. The data for these agree with those of other workers for primitive races in showing a low percentage of B, fairly high A and about half the population in Group O lacking both agglutinogens.

EILEEN J. W. MACFARLANE.

Madras,
March 1, 1936.

[1] Ayyar, L. K. Ananthakrishna, *The Cochin Tribes and Castes*, Ernakulam.

[2] Bijlmer, H. J. T., *Journ. Roy. Anth. Inst.*, 1935, **65**, 123–131.

Chromosome Numbers in *Millingtonia hortensis*, Linn. f. (Family: *Bignoniaceæ*).

Millingtonia hortensis, the Indian cork tree, a native of Burma and Malay Archipelago, is extensively planted in avenues and gardens in India. The chromosome numbers have been, for the first time, determined by the author. Several counts were made in the metaphase plates of somatic and meiotic mitosis. The $2n$ number of chromosomes is 30 and the n number is 15.

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