

We are grateful to Dr. J. H. Edwards for sending us samples from the family in Fig. 2.

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ANTHROPOLOGY

Hair Colour of the Population of Tristan da Cunha

As a result of the volcanic eruption on Tristan da Cunha in 1962 some 268 islanders were evacuated to the United Kingdom. During their stay in this country many of them agreed to co-operate in a number of investigations concerning their physical condition and characteristics organized by the Medical Research Council. Their pigmentation was examined as part of this programme; I was concerned with hair colour.

People the world over show a certain reluctance to part with quantities of their head hair sufficient for detailed laboratory investigation of pigmentation. In this respect the Tristanites were no exception, and only some 131 individuals provided useful quantities of hair.

A number of investigations of hair pigmentation including those of Reed¹, Sunderland² and Barnicot³ have utilized spectrophotometric data including, in particular, percentage reflectance values, as means of denoting brightness and hue. These procedures involving precise quantified information introduced a measure of objectivity into such studies which had been less evident in previous work. Thus Reed¹, for example, denoted redness by the *R* statistic with $R = 100(y_{530} - 0.243y_{400})/Y$ 650 while Sunderland² used size (*Q*), shape (*P*) and both combined (*L*) statistics in order to characterize the percentage reflectance curves for the hair samples which he studied.

It was hoped that sufficient hair would have been available from the Tristanites to allow the measurement of percentage reflectance values and subsequent statistical analysis of the data, as was possible in the enumerated studies. However, the quantities of hair available disallowed the use of spectrophotometric techniques. The only, fairly satisfactory, alternative means of characterizing this pigmentary variable appeared to be the use of the *Haarfarbentafel nach Fischer-Saller*. This consists of thirty tufts of human hair ranging in colour from very blond (Weiss blond), designated by the letter *A* at one extreme, to the darkest shades of hair (*Braun schwarz*), designated by the letters *U–Y* at the other, together with the intermediate categories *Hell blond* (*B–E*), *Blond* (*F–L*), *Dunkel blond* (*M–O*) and *Braun* (*P–T*) in order of increasing darkness. The Roman numerals *I–IV* cover a range of red hair shades; *V* and *VI* the red-blond range. Hair specimens are matched with these standards and the colours characterized accordingly. In this investigation, the matching was carried out independently by two people, working in good daylight. Their agreed results are summarized in Table 1.

None of the lighter shades of hair colour (*A–L*) is represented in this population, and only three individuals have hair as light as the *Dunkel blond* category. In fact, the great majority of the islanders have dark brown–black hair, the only dramatic exception being the unique vividly red-haired individual. Traces of red hair, usually single red hairs among predominantly brown–black hairs, are occasionally visible in this population.

Table 2 shows the relationship between hair colour and sex.

There do not appear to be any significant sex differences. Therefore, taking both sexes together, Table 3 shows the relationship between hair colour and age.

Table 1. FISCHER-SALLER HAIR COLOUR DESIGNATIONS FOR THE TRISTAN DA CUNHA SAMPLE

Fischer-Saller designation	Number of specimens	Fischer-Saller category
<i>M</i>	1	<i>Dunkel blond</i>
<i>N</i>	1	
<i>O</i>	1	
<i>P</i>	0	<i>Braun</i>
<i>Q</i>	1	
<i>R</i>	0	
<i>S</i>	4	
<i>T</i>	4	
<i>U</i>	8	
<i>V</i>	9	<i>Braun schwarz</i>
<i>W</i>	13	
<i>X</i>	46	
<i>Y</i>	42	<i>Rot</i>
<i>II</i>	1	
Total	131	100.00%

Table 2. HAIR COLOUR AND SEX

Fischer-Saller category	Males		Females	
	(No.)	(% of total)	(No.)	(% of total)
<i>Dunkel blond</i>	2	3.12	1	1.49
<i>Braun</i>	3	4.69	6	8.96
<i>Braun schwarz</i>	59	92.19	59	88.06
<i>Rot</i>	0	0.00	1	1.49
Total	64	100.00	67	100.00

Table 3. HAIR COLOUR AND AGE

Age group (years)	Fischer-Saller categories								
	<i>Dunkel blond</i>		<i>Braun</i>		<i>Braun schwarz</i>		<i>Rot</i>		Total
	No.	% Total	No.	% Total	No.	% Total	No.	% Total	
0–15	2	4.3	7	15.2	36	78.3	1	2.2	46
16–30			1	3.3	29	96.7			30
31–45					26	100.0			26
46–60					15	100.0			15
61–81					8	100.0			8
	2	1.6	8	6.4	114	91.2	1	0.8	125

It is well known from a number of investigations, including those of Cowie and Penrose⁴ and Sunderland², that hair colour darkens with age. In the present results, it is interesting to note that the fairest people, in the *Dunkel blond* category, are in the youngest age bracket (0–15 years) and that the *Braun* category likewise is found only among individuals aged 30 years and less. Again, red hair fades with increasing age. This was clearly demonstrated by Reed¹ and by Sunderland². Among red-haired individuals, the *R* statistic increases in value with the years; that is, their red hair becomes less so. Here, the only red-haired individual is in the 0–15 age category, and it may well be that at a more advanced age this individual's hair may become much less red or even predominantly brown. All individuals aged 31 years and over have *Braun schwarz* hair.

Quite evidently, this population is predominantly darkly pigmented. Some of the early settlers on Tristan were north-west Europeans, including Glass, Swain and Green, while Rogers and Hagan were American. However, others were from predominantly darker populations, including Repetto and Lavarello from Italy, five women from St. Helena who arrived on the island in 1827 and who are reported to have been of mixed European and 'coloured' parentage and also William Glass's wife from the Cape Coloured population of South Africa. These origins summarized by Harris *et al.*⁵ and the subsequent hybridization on Tristan adequately account for the hair pigmentation characteristics of the islanders.

Any estimate of the quantitative contributions of the Europeans, Americans, Italians, St. Helena people and Cape Coloureds (and possibly other groups also) to this population is fraught with difficulty. So far, even the initial step of comparing the hair colour of the Tristanites with the populations listed is impossible since hair colour data, particularly using the *Haarfarbentafel nach Fischer-Saller*, is not available for those groups.

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¹ Reed, T. E., *Ann. Eugen.*, **17**, 115 (1952).

² Sunderland, E., *Ann. Hum. Genet.*, **20**, 312 (1956).

³ Barnicot, N. A., *Ann. Hum. Genet.*, **21**, 31 (1956).

⁴ Cowie, V., and Penrose, L. S., *Ann. Eugen.*, **15**, 297 (1951).

⁵ Harris, H., Hopkinson, D. A., Robson, E. B., and Whittaker, M., *Ann. Hum. Genet.*, **26**, 359 (1963).