

#### TONGUE PIGMENTATION IN MAN: A NEW GENETIC TRAIT

THE main purpose of this note is to announce the discovery of a new genetic trait in human populations, tongue pigmentation. Tongue pigmentation, i.e., dark spots and patches on the surface of human tongue, was first noticed in human populations by Davis (1968). A subsequent study of the present author (Rao, 1969 a) suggests the genetic nature of this trait.

It may be mentioned that of the several 'tastes' the tongue can taste, the capacity to taste the chemical compound, phenyl-thio-carbamide (P.T.C.), was established to be a genetic character (autosomal, diallelic, dominant trait). For genetic studies on P.T.C. one may refer to Das (1956, 1958). With the present knowledge, one could observe three types of pigments (colour) on the tongue. (1) *Black patches*—It is suspected (Sanghvi, 1969) that these patches are associated with cancer. Active research is being carried by the Cancer Research Institute, Tata Memorial Centre, Bombay, on this aspect. (2) *White spots and patches*—In most of these cases, it is well known to be due to vitamin deficiency, thus not being of hereditary importance. And, (3) *Dark (not black) spots and patches*—These patches are usually of ash colour. It is about these pigments on tongue, that the present note is written.

*Tongue Pigmentation.*—Pigments of the third type mentioned above constitute 'tongue pigmentation' (Davis, 1968). One may have exclusively spots or patches or both. The position is anywhere on the upper surface or the borders (sides) of the tongue. It may be pointed out that one may have one spot to many, and/or a small patch of 2 sq. mm. to as big a one as to cover nearly half the surface area of the tongue. Figure 1 illustrates these spots.

One may know that there is a great variation in the geographical distribution of this trait. For example, roughly 22% are tongue pigmented in Kerala whereas only 13% in West Bengal and 14% in Maharashtra. Undoubtedly, this unequal distribution raises some pertinent problems.



FIG. 1

The author has collected several pedigrees and huge family data from various parts of the country, a preliminary report on which is ready (Rao, 1969 a). It is interesting to note that the sex and age factors do not show any significant differential incidence rates of tongue pigmentation (Rao, 1969 b). Analysis of the data, on the lines of Smith (1956), suggests the following :

*Genetic Hypothesis.*—Tongue pigmentation is an autosomal diallelic recessive character in man, controlled by two alleles 'a' and 'A' where 'A' is dominant over 'a'.

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