

Opportunity for Natural Selection Among the Sankar Koch of Meghalaya, India

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INTRODUCTION

Selection is one of the major evolutionary forces that brings about changes in the gene frequencies in a population. Differential contribution to the gene pool is the important measure to natural selection which on the other hand is the function of fertility and survival differentials. Crow (1958) devised a composite index involving fertility and mortality parameters which later on improved by Johnston and Kensinger (1971) to measure the maximum potential rate of change through differential mortality and fertility, assuming that variations in mortality and fertility are genetically determined and fitness is completely heritable. Livingstone and Spuhler (1965) suggests that, if the computed value of the index comes to zero, there would be no change in the genetic makeup of a population through selection.

A large number of studies all over the world have already been carried out to demonstrate the role of natural selection imposing characteristic fertility and mortality in various population at different levels of technological advancements. Unfortunately, many populations of North East India in general and Meghalaya in particular has not yet been studied as far as natural selection potential is concerned. In view of these, in the present note an attempt has been made to deal at micro-level with the intensity of natural selection in Sankar Koch, an endogamous section of the Koch tribe of Meghalaya.

The Koch is a Scheduled Tribe, who are mainly concentrated in Western and South-western parts of West Garo Hills of Meghalaya. Their dialect is of Tibeto-Burman origin (Gait, 1924). The influence of both Bengali and Assamese languages are also reflected in their dialect. The Koch have seven endogamous subdivisions (*Bhag* or *Bibhag*) namely, Harigaya or Sanga, Satoari, Wanang, Banai or Dasgaiya, Tintikiya, Chapra or Margan, and Sankar Koch. It is believed that those Koch, who were excom-

municated for committing social offences like marrying outside their own divisions were later on known as Sankar Koch.

MATERIAL AND METHOD

The present investigation was conducted among the Sankar Koch inhabiting Ghandipara village of West Garo Hills District of Meghalaya. For the present analysis, the data on pregnancy outcome of 23 married Sankar Koch women aged 40 years and above were only considered. Difficulties were experienced in the assessment of age in case of few elderly women. In the cases, who were not aware of their real age, it was estimated with reference to some important local events and also with the help of other persons in the household/village. Similarly, the information given by the mothers were also cross-checked and verified from their respective husbands or/and elderly women of the household, even then there may be minor recall lapses in information.

The total selection intensity, has been worked out by using both original (Crow, 1958) and modified (Johnston and Kensinger, 1971) formulae. Comparison of the present data with that of the other available data from the population groups of Meghalaya reported so far is also attempted.

RESULTS AND DISCUSSION

The study reveals that the total selection intensity is acting with a very moderate intensity in the Sankar Koch. The index according to modified formula (Johnston and Kensinger, 1971) shows slightly higher value than that of the value calculated according to original (Crow, 1958) one. It is also noteworthy that among them, opportunity for selection operates mainly through differential mortality and contribution of post-natal mortality is much higher than pre-natal mortality.

A comparison of the present data with that of

the other population groups reported so far from Meghalaya is also attempted. Among the Hajong (Barua, 1983), Jaintia (Deka, 1989), Pnar (Kho-

Table 1: Parameters used in calculating the total selection intensity among Sankar Koch

Parameters	Number
Number of mothers aged 40 years and above	23
Number of conception / pregnancy	135
Number of live-births	130
Number of embryonic deaths	5
Number of premature deaths	27
Survivors from 15 years and above	103
Proportion of survivors	0.9630
Proportion of childhood death	0.2077
Proportion of embryonic death	0.0370
Number of live-berths per women	5.6522
Variance of mean live-births	2.25

ngsdier, 1990) mortality component of selection are comparatively higher than its fertility component, while it is just reverse among the Punjabi Sonar of Shillong (Jaiswal and Dutta Choudhury, 1989) and both Christian and non-Christian War Khasi (Khongsdier, 1994). The index of total selection intensity (I) in Punjabi Sonar of Shillong is the lowest, in which both I_m and I_f are the lowest, while it is highest in the Jaintia (Deka, 1989). The present data indicates that the 'I' among the Sankar Koch is more towards the lower limit of the range of the Indians (0.11 – 2.25).

KEY WORDS Selection Intensity. Sankar Koch. Tribe. Meghalaya.

ABSTRACT Selection potential based on differential fertility and mortality has been computed for Sankar Koch tribe of Meghalaya. It emerges out that selection is acting on them with a very moderate intensity. The present data are also compared with the available previous study from Meghalaya, India.

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Table 2: Indices of Selection intensity: The Sankar Koch and other population groups of Meghalaya

<i>Populations</i>	<i>Im</i>	<i>If</i>	<i>I</i>	<i>Ime</i>	<i>Imc</i>	<i>If</i>	<i>I</i>	<i>Source</i>
	<i>(Crow, 1958)</i>			<i>(Johnston and Kensinger, 1971)</i>				
Sankar Koch	0.2621	0.0704	0.3510	0.0384	0.2621	0.0704	0.4029	Present study
Hajong	0.443	0.131	0.631	0.032	0.443	0.131	0.684	Barua, 1983
Jaintia	0.456	0.125	0.638	0.107	0.456	0.125	0.814	Deka, 1989
Punjabi Sonar of Shillong	0.050	0.054	0.107					Jaswal & Dutta Choudhury, 1989
Pnar	0.236	0.133	0.401					Khongsdier, 1990
Christian War Khasi	0.1473	0.1847	0.3592	0.0933	0.1473	0.1847	0.4860	Khongsdier, 1994
Non-Christian War Khasi	0.1804	0.2253	0.4463	0.0840	0.1804	0.2253	0.5679	Khongsdier, 1994

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