

THE DREADLOCKS-HAIR AND ITS INHERITANCE

They are not Bob Marley followers rather naturally happened to children in Wonosobo society. During their childhood, children who live in Dieng plateau may be naturally experienced the dreadlocks-hair. This phenomenon is unique because only the children in the area are experienced. The phenomenon is trusted by the community as a heritage about their ancestor, namely Ki Kolodete.

So far, when there are children who have the characteristic of dreadlock are seen as descendants of Ki Kolodete. The parents who are having children with these characteristics should treat their children well and keep all that on request by the child to avoid cursing or accident. To relieve any possibility of bad as the disease or even death, an interesting shaving-ritual would be done. The ritual itself contains spiritual, historical and philosophical values for Wonosobo society and stated as a cultural identity. Some traditional offering, such as rice, coins, eggs, or flowers, and invocation are involved in the ritual.

However, can we see or believe that the dreadlocks hair is concerned to the myth rather than as a scientific problem?

According to the study results (Suratsih, *et.al.* 2009), some information that is related to the dreadlocks-hair phenomenon was revealed, i.e.:

1. the dreadlocks hair appears when children are 1-3 years-old and begins with a high fever and strain. The fever would be healed without medicine. However, the dreadlocked hair could not be separated by washing.
2. the dreadlocks hair mostly experienced to the females,
3. the hair would not be emerged anymore after the shaving ritual is done. But, there is an exception on a case of Mrs. Poniem, whom the hair was being dreadlocked again although it has been shaved.
4. there is no physically treatment rather just a ceremony at the shaving ritual.
5. it is a fact that based on their descent history, the family of dreadlocked hair children was experienced the similar hair when they were child.

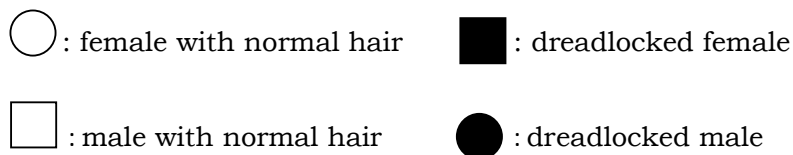
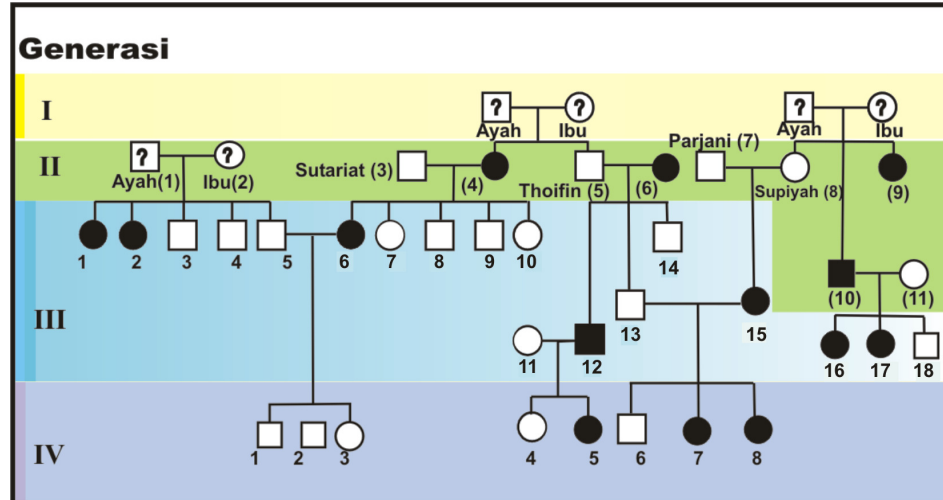
Analysis of the data showed that the phenomenon of the dreadlock-hair is a genetic problem. Some explanations are given in the table below:

No.	Information	Biological explanation
1.	hair appears when children are 1-3 years-old	Gene has its time to be expressed. One of the factors is the age.
2.	It begins with fever and strain, and both would be disappeared naturally.	There is a physiological exchange when a gene is being expressed. A fever and strain, occurs or disappears as a mechanism of the homeostatic.
3.	dreadlocks hair mostly experienced to females	Genetic inheritance of the dreadlock hair is probably autosomal, because both of male and female have similar chance to be expressed
4.	the dreadlocked hair could not be separated by washing	Genetic factor is dominant rather than environmental one.

5.	The dreadlock hair would not be emerged anymore after the shaving ritual is done. But, there is an exception on a case of Mrs. Poniyem, whom the hair was being dreadlocked again although it has been shaved	The influence of external suggestion to the cessation of dreadlocked hair has not been found yet. If the gene expression is stopped when the shaving ritual is done, the expression of the gene would be happened anymore.
6.	the family of dreadlocked hair children was experienced the similar hair when they were child	There is a genetic inheritance that raises the trait to the offspring through certain pattern.

As an example, the study tried to identify the inheritance of the dreadlocks-hair which is occurred at Sutariat's family. There are view concerns in the analysis of Sutariat family tree (pedigree) need to be explained. Firstly, the "?" symbol on the pedigree shows that the subject's gene expression unknown (untraceable). Secondly, basis for character classification appears is divided into two categories, normal hair (uncolored blocks symbol) and the dreadlocks-hair (colored blocks symbol).

Normal hair means an individual has never experienced the dreadlocks-hair gene expression since infant (in this case one could have straight hair or curly or wavy which is the parent's gene expression mixture). As for the dreadlocks-hair, an individual has experienced the expression of the dreadlocks-hair gene.

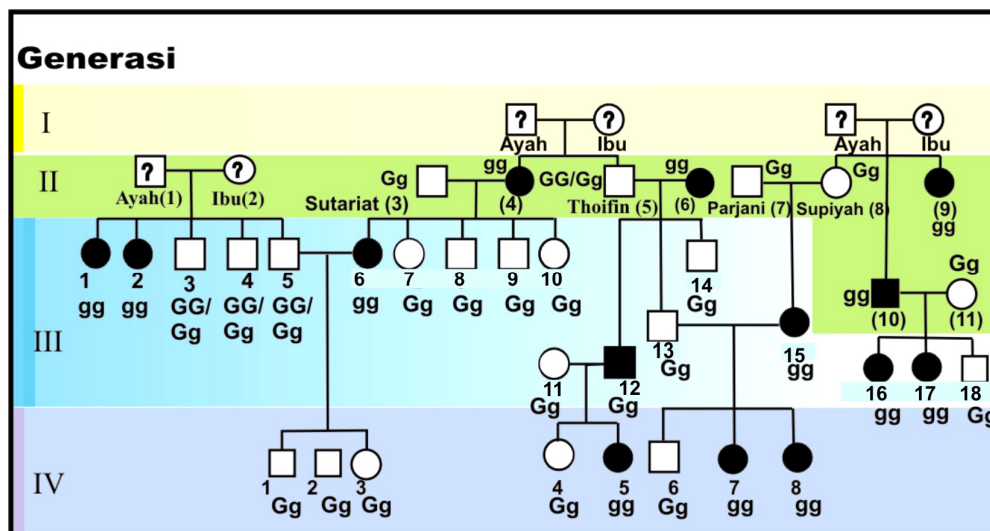


Based on Pedigree shown above, the dreadlocks-hair gene is not an X chromosome dominant associated gene, since not all females are dreadlocked. When the dreadlocks-hair gene is X chromosome dominant associated gene, then all females are definitely dreadlocked. A marriage between normal male “Parjani” (7) and normal female “Supiyah” (8) on the second generation descent one female infant on the third generation born with the dreadlocks-hair.

This shows that the dreadlocks-hair gene is not recessive X chromosome associated gene, because if the gene was recessive X chromosome associated, then the gene will not be expressed in any female infant because the parent are normal. The dreadlocks-hair gene is not an X chromosome associated, which means the gene is an autosomal.

For instance, the dreadlocks-hair gene is an autosomal dominant nature and given with “G” symbol, then the dreadlocks-hair individual is “GG” or “Gg” genotyped and normal individual is then “gg” genotyped. It is impossible applying this example in normal haired Parjani and Supiyah marriage on the second generation, because they have a dreadlocked-female infant on the third generation. Marriage between two normal individual (both “gg” genotyped) will most definitely descent a normal infant. This shows that the dreadlocks-hair gene is not a dominant autosomal gene.

For instance, the dreadlocks-hair gene is recessive autosomal and given with “g” symbol, then the dreadlocks-hair individual is “gg” genotyped. As well as normal individual is “GG” or “Gg” genotyped. This is applicable at all marriages in Sutariat family. The pedigree showed below pictures the genotype of each individuals of Sutariat family member.



The Image shown above tells that the dreadlocks-hair gene is recessive autosomal nature.

Summarized from:
 Suratsih, et.al. 2009. Pengembangan Modul Pembelajaran Genetika Berbasis Fenomena Lokal. *Cakrawala Pendidikan Jurnal Ilmiah Pendidikan*, 2, Th XXVIII, 165-176