

Research-data

C. No. 2.

Eugenical Investigation on the
inbreeding families

-----surveyed in 1943 -----

by

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Preface

According to the result of the study of heredity, it is generally said that the intermarriage results in a bad family. If it is true, this is a problem that we can't overlook from a view point of population problems in quality. Therefore Institute of population problems determined the engenic investigation on the inbreeding families in 1943. The following report is the summary of the result surveyed in a settlement of Narata and Yushima at Nishiyama village in Minamikoma district, Yamanashi Prefecture.

The inhabitants at Narata settlement have intermarried with the cousins again and again during several generations. The total investigated numbers are 341 (121 at Narata, 221 at Yushima). But here I describe the result of investigation about people of over 20 years old (73 at Narata 117 at Yushima). The inhabitants at Yushima were investigated to compare with the inhabitants at Narata.

I) Morphological characters.

The physical characters measured from a view point of morphology are as a following table.

Table I

Table I

(1) physical characters (man of over 20 years old)

	Group of Narata		Group of Yushima	
	No.	M±m (cm)	No.	M±m (cm)
girth of head	36	55.58±0.26	39	54.95±0.23
maximum head length	37	19.03±0.09	39	18.72±0.08
maximum head breadth	37	15.38±0.07	39	15.28±0.09
minimum fore-head breadth	37	9.95±0.06	38	9.87±0.06
maximum inter-zygomatic breadth	37	14.19±0.09	38	14.21±0.09
external biocular breadth	37	9.11±0.07	39	8.87±0.07
interocular breadth	37	3.82±0.06	39	3.67±0.05
maximum nose breadth	37	3.50±0.04	39	3.42±0.05
maximum mouth breadth	37	4.65±0.07	39	4.62±0.07
maximum inter-mandibular breadth	37	11.01±0.16	38	10.99±0.01
nose height	37	5.34±0.06	39	5.49±0.07
total face length	37	12.61±0.12	39	12.59±0.10
total head height	36	21.83±0.16	38	21.51±0.12
girth of neck	36	34.00±0.23	39	32.90±0.23

morphologic- al ear length	37	3.49±0.05	53	3.52±0.05
morphological ear breadth	37	5.31±0.09	53	5.43±0.07
physiognomic ear length	37	6.14±0.07	53	6.13±0.07
physiognomic ear breadth	37	3.10±0.05	53	3.12±0.04

standing height	35	156.86±0.88	38	156.32±0.75
sitting height	35	83.46±0.56	39	84.36±0.38
length of upper limb	34	69.29±0.46	38	68.34±0.44
breadth of shoulder	35	36.21±0.31	38	36.25±0.36
girth of chest	36	84.94±0.59	38	83.90±0.61
girth of chest in inspiration	36	83.72±0.57	38	86.03±0.59
girth of chest in expiration	36	83.72±0.60	36	83.17±0.67
length of all leg	15	87.00±1.16	35	84.49±0.56

(2) Physical characters (woman of over 20 years old)

	Group of Narata		Group of Yushima	
	No.	M±m (cm)	No.	M±m (cm)
girth of head	34	53.85±0.25	33	53.88±0.32
maximum head length	35	18.11±0.07	44	17.99±0.09

maximum head breadth	35	14.66±0.09	44	14.48±0.07
minimum forehead breadth	35	9.46±0.07	44	9.61±0.08

maximum interzygomatic breadth	35	13.41±0.09	44	13.38±0.10
external biocular breadth	35	8.94±0.05	44	8.78±0.07
interocular breadth	35	3.66±0.04	44	3.55±0.04
maximum nose breadth	35	3.17±0.05	44	3.16±0.04
maximum mouth breadth	35	4.34±0.07	44	4.33±0.07
maximum intermandibular breadth	35	10.34±0.09	44	10.42±0.10
nose height	35	4.84±0.06	44	5.26±0.05
total face length	34	11.72±0.10	44	11.97±0.09
total head height	33	20.88±0.22	42	20.91±0.13
girth of neck	35	30.09±0.36	43	29.31±0.21

morphological ear length	35	3.40±0.05	64	3.61±0.05
morphological ear breadth	35	5.14±0.07	64	5.18±0.05
physiognomic ear length	35	5.80±0.07	63	5.87±0.05
physiognomic ear breadth	35	3.01±0.04	64	3.10±0.03

standing height	36	146.31±0.84	43	147.88±0.75
sitting height	36	79.31±0.66	43	80.26±0.40

external ear length	35	8.94±0.05	44	8.78±0.07
interocular breadth	35	3.66±0.04	44	3.55±0.04
maximum nose breadth	35	3.17±0.05	44	3.16±0.04
maximum mouth breadth	35	4.34±0.07	44	4.33±0.07
maximum intermandibular breadth	35	10.34±0.09	44	10.42±0.10

length of upper limb	35	63.29±0.44	42	63.95±0.44
breadth of shoulder	36	33.07±0.25	42	33.67±0.20
girth of chest	36	76.00±0.66	42	75.50±0.57
girth of chest in inspiration	35	75.34±0.68	40	74.55±0.63
length of all leg	27	83.33±0.58	43	80.26±0.57

According to above table, the head of inbreeding group is larger than one of neighboring group and, especially in head length, compared with the inhabitants of neighboring prefecture (Nagano 187.47±0.19), they have longer heads. This is same in the women too (Shizuoka 177.13±0.26). The faces of men are larger, but nose height only is smaller, while the faces of women are larger in the breadth, but smaller in the length, especially nose height is very small. But, compared with the inhabitants of neighboring prefecture Nagano, Shizuoka, the total face length is still longer. And also their necks are bigger than neighboring groups. As to the parts of ear, I can not find out the difference. Their bodies are small-statured except girth of chest. Generally speaking, the characters of this inbreeding group appear in the part of head and face.

2) Physiognomic characters.

The distinguished characters are their eyelids, foreheads and the conditions of the zygomatic process. People of onefold eyelid are more frequent than in neighboring group and the borders of the hair in foreheads are horizontal and most of them are stronger and broader in the zygomatic process. Other characters as

hair

hair colour, hair form, colour of skin, iris colour and etc., are not different, namely all have straight black hairs, black colour of iris and dark brown skin. After all is is three characters above mentioned to attract my attention.

3) Some other different facts.

The result of investigation on their powers is shown as follows.

Table 2.

(1) degree of power (man of over 20 years old)

	Group of Narata		Group of Yushima	
	No.	M±m (kg)	No.	M±m (kg)
grasping power of right hand	26	37.62±1.19	40	33.15±0.90
grasping power of left hand	26	36.04±1.48	40	37.08±1.06
power of back muscle	26	112.89±4.40	41	117.44±3.30
capacity of the lungs (cc)	29	3572.42±123.36	42	3633.33±101.05

(2)

(2) degree of power (woman of over 20 years old)

	Group of Narata		Group of Yushima	
	No.	M±m (kg)	No.	M±m (kg)
grasping power of right hand	22	26.27±0.91	40	28.38±0.80
grasping power of left hand	22	23.96±0.96	40	26.35±0.59
power of back muscle	22	67.96±3.18	33	75.26±2.19
capacity of the lungs (cc)	33	2515.15±85.29	38	2739.49±55.14

I can find out the conspicuous difference between two groups according to above table 2.

The group of Narata is inferior to one of Yushima in every power, especially in the power of back muscles. It is the remarkable characters in these inbreeding families that the physical power and capacity has become inferior to others. It is generally said that the pure crossing from generation to generation shows the inferior type in some characters, especially in fertility, according to the experiment of animals.

Above tables suggest me such a condition as this.

Summary

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I can summarize the result of this investigation as follows:

As you see in detail according to above tables, some characters as the parts of head are superior type, but other characters as the power or capacity are inferior type.

In other words, the inbreeding makes various characters put in several types of which one is prominent and the other is inferior. But the hereditary disease as mental or physical did not appear so much as we imagine, because perhaps these diseases will be selected or eliminated during generations. Such a problem is one whether they have bad gens in hereditary or not, and at the same time we must not forget the influence of social and economic conditions.