

Research-date<sup>a</sup>

C No. 1

The Investigation on Mixed Blood Families of  
Micronesian-European or other.

--- as the materials of Eugenics from a view  
point of physical Anthropology ---

†Surveyed 1941-by

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## Preface

This materials was investigated at the Micronesian Islands from July to November in 1941. The most important point of my research is the study of somatology, especially the study of morphological heredity of half-blood. In this investigation I must express my gratitude to the following people--- above all two, one is my kind leader K. Hasebe, the other is Mr. K. Sugiura, and at the same time the people of the Micronesian Japanese Government too.

### The summary of these families

1) Spanish-English-Ponapean mixed blood family: This family began with the marriage of a Spanish Tongin and a Ponapean girl of Tip en papa (title of maternal line family) at unknown age, and secondarily their daughter Elisabet's marriage with an English who is unknown. The list of this family is on Table 1. On this table Josep's children are 9, but originally 12 and 3 of them died. Also Rut's children were 16 but 6 of them died.

Amantoj's wife Karmela is not a pure Ponapean. She is also a half-blood of another lineage, father is a Spanish Landish and mother is a Islander Alena. So the family are mixed with Spanish blood in the first generation, English blood in the second, and some of them are mixed again with Spanish blood in the third. The other spouse are called as pure Ponapean. But if we investigated to go back to several generation, other mixed blood might be found, but now we can't know it.

These mixed blood generally live in the neighbourhood of Kichi village in Ponape Island, and the local names are as follows:

Lawatik, Jauijo, Sainowal, Marau, Tomorawal, Mant, Param, One, Teate, Kolonia Town, Parkil, Nanpomal, Kapenpore, Mataraniam, Jokaji, Loi etc.

Above

Above all, the natives of Lawatik, Jauijo, Mant are most general, and of Sainowal, Marau, Kolonia Town are next. The other are all small number. The age ranks from Emi's 73 of the third generation to Rola's 1 of the fifth generation. I take the abbreviation "S-E-Pp" in place of Spanish-English-Ponapean mixed blood family.

2) Portuguese-Spanish-Ponapean mixed blood family:  
This family began with the marriage of a Portuguese Jowakin Cimeta and a Ponapean girl Karolina (or Kalina) from a certain Tip. Kalina is a native of Anpenpar, but the other fact remain unexplained. The first generation of the family are all died, but under the second generation there is over 50 descendants. The list of this family is on Table 2.  
On this table, the spouse who married but has no child is omitted. Malserinb's wife Malkarieta is not a pure Ponapean but a mixed blood, father is a Spanish Rolenjo Moiya, mother is a Ponapean Malseatas in Anpenpar. Members of this family live in the neighbourhood of Kichi village too, most of all live in Sainowal and Anpenpar, and a few in Nanpemal, Teate, One, Loi etc. The husband of the youngest girl Mikelina of the second generation is unknown, and her 2 children have different fathers. I take the abbreviation "Pt-S-Pp" in place of Portuguese-Spanish-Ponapean mixed blood family.

Table 1. Spanish-English-Ponapean mixed blood family  
 ( ) = the dead or the address unknown, number = age  
 \* = male, ' = female

* (Mongin) (a Spanish) (a Pona- pean) (Tip en papa)	(*Johanes) (*English) (Elisabet)	('Jujin) (*Rangeju)	'Rut 52 *Sale 55 *Teonis 48 'Siana 40 *Perdinañ 41 'Elisabet 31	'Matirain 27 *Ueliam 31 'Esita 28 'Roseti 26 *Arnolt 24 'Jupano 19 *Paihi 16 *Matelina 9 'Tomoko 7 *Peratio 3 'Tilina 33 *Lintel 37 'Elisabet 32 *Elisabet 48 'Ema 31 *Tobias 39 *Pol 27 'Rut 25 *Kole 25 'Selom 22 'Masuko 19 *Tosio 17 'Olupa 14 'Etumont 13 'Atelina 23 *Periot 9 *Lentinel 7 'Antelina 6	*Peat 10 *Preerout 8 *Bentel 5 *Perent 3 *Penjamin 10 'Akiko 15 *Shintaro 14 *Tirol 8 'Raiko 6 'Ayako 12 'Rupal 6			
						*Josep 55	*Jupano 19	*Penjamin 10
						'Sulia 53	*Paihi 16	
							*Matelina 9	
							'Tomoko 7	
							*Peratio 3	
							'Tilina 33	'Akiko 15
							*Lintel 37	*Shintaro 14
							'Elisabet 32	*Tirol 8
							*Elisabet 48	'Raiko 6
							'Ema 31	'Ayako 12
							*Tobias 39	'Rupal 6
							*Pol 27	
							'Rut 25	

		Amantoj	50	]	'Katalina	19
		'Karmela	48	]	'Lenola	18
		*Kaluro	45			
		*Pertinan	70		'Tolores	9
	(*Merik)				*Elman	21
	('Emele)				*Taniel	20
		'Sopi	45	]	*Jamuel	18
		*Jowanij	45	]	'Emirel	16
					*Lupen	12
		*Ulenten	43		*Konarat	7
		*Utinel	40	]	*Tsugio	12
		'Ijapela	31	]	'Elisabet	10
		*Ketelson	32			
		'Etnona	33	]	*Kuakina	14
	(*Apontal)	*Pruno	46	]	*Sepastian	8
		*Silibestel	30	]	'Rekina	10
		'Pilorentia	27	]	*Kojtantino	8
(*the 2nd husband)	'Emi	73	]	*Rekuiet	29	]
(*Chamen)	(*Eti)		]	*Koper	25	]
	*Tomas	49			'Rola	1

Table 2. Portuguese-Spanish-Ponapean mixed blood family

		*Jowakin	28		
		'Kantralia	25	*Rosalio	7
		*Santor	30	*Petro	4
	*Antoleaj	*Ainuruji	19	*Pernalt	3
	'Pajitula	'Piral	16		
		'Reon	6		
		'Karmen	3		
		*Aniseito	29	'Mariapl-	
		'Asunjion	27	anga	8
		*Emerano	32	*Epenjio	6
		'Conjara-		*Uisenjio	5
		jion	22	*Penanjio	3
		'Consepjion	19		
(*Jowakin)		*Teopilo	16		
(A Portuguese)	*Rolenjio	'Isapela	13		
'Karolina)	'Telenita	'Pilorentia	11		
(a Ponapean)		'Pilomenia	9		
		'Iejuja	8		
		'Manuela	6		
		*Teonija	2		
		'Frañsisca	17		
		'Josepa	15		
	*Fransisco	*Malia	13		
	'Paulina	*Paulino	10		
		'Antonia	8		
		'Pernaltina	5		
		'Ateliana	17		
	*Malserino	'Pernaltina	13		
	'Malkarieta	*Ikinajio	6		
	*Josep	Rosalio	4		
	( 'Roja)				
	*Glekolio	*Iralio	26		
	( 'Mikelina)				
	(unknown)	*Pernalt	19		
		*Permino	18		

3) **Philippinese-Portuguese-German-Ponapean mixed blood family:**

This family mixed many bloods though its members are a few. It consist of two mixed families, the one began with the marriage of Philippine Edward Pepio (his father Mitello is a native of Iroiro, Philippin Islands, his mother Marsèdes a native of Kabity near Manila) and a Ponapean girl. Concerning this girl many are unknown except the fact that she lived in Kolonia Town. The other began with the marriage of a Portuguese who is unknown and a Ponapean girl, and their daughter Ana Lived in Mtaranum, Ponape, married with a German Gustav Schmidt bore a son Taniel, and completed by the marriage of Taniel with Pepio's eldest daughter Tomenica. The list of this family is on Table 3. In this family Pepio is 78 years old, and his Ponapean wife is unknown whether she live or die. Gustav Schmidt is now in Germany. Members of this family are all lived in Kolonia Town. Taniel is now in police office of Ponape Island Japanese Government. I take the abbreviation of "Ph-Pt-G-Pp" in place of Philippine-Portuguese-German-Ponapean mixed blood family.

Table 3. Philippine-Portuguese-German-Ponapean mixed blood family.

(*a Portuguese)	( 'Ana)			
(*a Ponapean)	(*Gustav Schmidt)	*Taniel	36	Atela 10
	*Pepio	78		
	(a Philippine)			'Tomenica 26
	(*a Ponapean)			*Malsero 19
				'Rakina 15

4) **American-Rutman-Kusaian mixed blood family:**  
This family began with the marriage of an unknown named American and a Kusaian girl Tlpe, and secondarily their daughter Katalina married with a half-blood Marus. The list of this family is on Table 4.

Table 4. American-Rutmahan-Kusaian mixed blood family:

(*an American)	]	'Katalina	33	[	*Shoichi	12
('Tlipe)					*Seishiro	11
(a Kusaian)						
(*Tosie)	]	*Maruss	38	[	'Tamako	9
(a Rutmahan)					*Toshio	5
('Mary)					*Akira	3
(a Kusaian)						

In this family, though Tosie lives in Relo, Kusai Island, he is a native of Rutmah Island in Polynesia Islands. Mary and Tlipe are the native of Relo, but their address is unknown. Marus is now in police office of Kusai Japanese Government. I take the abbreviation of "A-R-K" in place of the mixed family of American-Rutmahan-Kusaian. This and next family was investigated in Kusai Island.

5) German-Ponapean-Kusaian mixed blood family:

This family began with the marriage of a German named Weilbächer and a Ponapean girl Meriam and then their son Frety's marriage with a Kusaian girl Srue. Srue's parents are both Kusaian, father's name is Sarna, mother's Kiet. The list of this family is on Table 5.

Table 5. German-Ponapean-Kusaian mixed blood family:

(*Weilbächer)	]	*Frety	44	]	*Pernat	19
(a German)					'Meriam	18
('Meriam)					'Karmina	11
(a Ponapean)		'Srue	39		'Rusia	9
		(a Kusaian)			a younger brother	
					& a sister	

German



German Weiblicher and Ponapean Meriam are now unknown whether they live or die. And when I was investigating, I knew Rasia's younger brother and sister live, but the time couldn't permit me to investigate them. They all live in Relo. I take the abbreviation of "G-Pp-K" in place of German-Ponapean-Kussian mixed blood family.

6) German-English-Milean-Ebonean mixed blood family: This family took a complicated mixed blood process. At first a German Karl Friedrich Heine married with an English Mary Aun who was born in Australia, and bore a son Karl R. Heine. Whether Aun is a pure English or a half-blood of English and Oceanian is unknown. Karl R. Heine was born in Australia, and after became a man, he graduated from a mission school in San Francisco, preached at Jabor in Jaluit Island over ten years, afterwards went round the Ralik Islands, then traveled to Ratak Islands, and preached here for ten years. Next he came back again to Jabor and has lived there to this day. During this time he married with a girl named Arbela. She has died. Her father is a native of Namurik in Ralik Islands, and her mother is a native of Ratak Islands. Karl R. Heine and Arbela bore a son Claude Heine. After Arbela died, Karl R. Heine married with a girl named Merij whose parent are the native of Menurik Island, and bore three children. His eldest son Claude Heine married with Grace Heine. Her father is a native of Ebon in Ratak Islands. The list of this family is on Table 6.

Table 6. German-English-Milean-Ebonean mixed blood family:

				'Grace Heine 48	*Dwicht
	('Arbela)			(Mile-Ebonean)	Heine
(*Karl F. Heine)	(Namurik-Ratakean)			*Claude Heine 48	23
(a German)		*Karl R. Heine	71	'Minea 24	*Jon 12
('Mary Aun)		'Merij	63	'Juanita 22	
(an English)	(Namurikean)			'Stella 20	

This

This family live now in Jabor and Imroji, Jaluit Island. I take the abbreviation of "G-E-M-Es" in place of the German-English-Milean-Ebonean mixed blood family. As above mentioned, the mixed blood family that I have investigated are 6, and numbers of member are 157, from 1 year to 78 years old. The names in the list are written by their pronunciation and spelling.

### Investigation article

According to number of investigated members and quantity of investigating hours, I couldn't equally investigate for each family, but my recorded articles are as follows;

1) Physiognomic article

Hair(form, colour etc), Skin, Eye(Iris colour, eyelid, caruncula lacimalis etc), Face and Frontal part(Forehead, face form etc), Nose (nose root, nose saddle, nostril etc), Lip(projection, thickness etc), Ear(ear lap, ear lobe etc), Finger-print, Palm-print, Blood type (A, B, O, type)

2) Measured article

maximum headlength, maximum headbreadth, minimum forehead-breadth, maximum interzygomatic breadth, maximum inter-mandibular breadth, interocular breadth, external bi-ocular breadth, maximum nosebreadth, maximum mouthbreadth, total face length, nose height, morphological earbreadth, physiognomic earlength, standing height, sitting height, span of arms, length of upper limb, breadth of shoulders, total headheight.

### The outline of investigated results

The details about each families shall be reported on some other day, and here I will report the outline of them:

1) Colour of hair:

The colours of their hairs were investigated by Fischer-Saller's hair-colour-table.

According

According to this result people of the black-brown hair as Y and X are 113 (65, over 16 years and 48, below 15 years), dark-brown as W and V are 33 (11, over 16 years and 1, below 15 years), and brown as U and S are 54 (4, over 16 years and 1, below 15 years), but I could not find out light hairs as W, V, U, S, among pure Ponapean and pure Kusaian. Milne-Ebenean mixed blood Grace Heine had dark-brown hair as W, and German-English mixed blood Karl R. Heine had very light hair as N in G-E-M-Eb family.

2) Form of hair:

I observed hair of parietal part by Martin's Schema. According to the result, weak straight (45 members), weak straight-low waved (21), short waved (15) are most general, and low waved-long waved (13) are next. Most children have weak straight and men long or short waved. According to Martin, I divided it into three main parts as Table 7.

Table 7.

mixed blood family		straight	waved	rolled
S-E-Pp	) over 16 years	27.4%	50.7%	12.9%
Pt-S-Pp				
Ph-Pt-G-Pp	) below 15 years	76.9%	13.5%	9.6%
A-R-K	) over 16 years	75.0%	25.0%	0
G-Pp-K				
	) below 15 years	100.0%	0	0
pure Ponapean (spouse)		65.0%	30.0%	5.0%

Namely many men of "S-E-Pp", "Pt-S-Pp", "Ph-Pt-G-Pp" have waved hair, and the other have straight hair. And mixed blood of "G-E-M-Eb" have mostly waved hair.

3) Colour of skin:

To

To determine the colour of skin I used Luschan's skin-colour-table but the result did not always correspond to it. Generally they had the skin of near black-brown as about No. 17 but among them a few was light brown as No. 14, 15.

4) Colour of Iris:

I investigated Iris colour by Martin-Schultz's Eye-colour-table. According to the result, the dark-brown as No. 14, 15, 16 are most general, the spouses of pure Ponapean and Kusaian have not the light below No. 11, but mixed blood spouses have the light colour as No. 7, 8. German-English mixed blood Karl R. Heine has the Blue eyes like No. 1a, and his wife Namurik-woman Menij has the pretty light colour as No. 10; the other are brown as No. 13, 14.

5) Form of face:

I observed the form of face by Walter Scheidt's Schema, and according to him, I divided the result into three main form as Table 8.

Table 8.

Race	slender	form middle	form wide	form re- porter
Ponapean	26.4%	52.3%	21.3 %	Hasebe
Kusaian	32.3%	33.3%	34.4%	Hasebe
S-E-Pp Pt-S-Pp(full age) Ph-Pt-G-Pp	30.4%	53.5%	16.1%	Shino- zaki
A-R-K G-Pp-K (full age)	40.0%	20.0%	40.0%	Shino- zaki
German	54.6%	32.8%	12.6%	Scheidt

Namely

Namely mixed blood have more slender and middle form, and less wide form than Ponapean, and more middle form and less slender and wide form than Kusaian. Comparing with German, slender are less, wide are more.

6) Nose:

I recorded the nose profile by Martin's Schema and nostril by Topinard's Schema. The profile are divided into following three points of view, and also number sings are as follows:

nose root: low=1 middle=2 high=3  
nose saddle:concurve=1 straight=2 convex=3  
nose base: front downwards=1 horizontal=2 front upwards=3

Descending in order of root, saddle, and base, 221 types are most general(29) and 211 types (20), 212 types(19) are next. I divided them into three main parts --- small type(111,121,131,211), middle type, (212,221,222,223,231,232,322), and large type (233,332) and its result is on Table 9.

Table 9.

mixed blood family	small type	middle type	large type
S-E-Pp ) over 16 years	16.1%	75.8%	8.1%
Pt-S-Pp )			
Pn-Pt-G-Pp) below 15 years	51.9%	48.1%	0
A-R-K ) over 16 years	20.0%	60.0%	20.0%
G-Pp-K ) below 15 years	42.9%	42.9%	14.2%
pure Ponapean(spouse)	15.0%	85.0%	0

As you see, men have middle type, and children have small and middle type at almost same rate, Large type-- this is generally in European -- is not in Ponapean but in a few mixed blood. And German-English mixed blood Karl R. Heine is large type, and the other mixed blood have generally middle types. Nostril form is observed by Topinard's Schema, and its result is on Table 10.

Table 10.

mixed blood family	high type	middle type	low type
S-E-Pp over 16 years	14.5%	67.8%	17.7%
Pt-S-Pp below 15 years	0	47.2%	52.8%
Ph-Pt-G-Pp			
A-R-K over 16 years	40.0%	60.0%	0
G-PP-K below 15 years	0	57.1%	42.9%
pure Ponapean(spouse)	5.0%	65.0%	30.0%

Namely children of mixed blood have no high type, and men of Kusaian mixed blood have not low type, only children of Ponapean mixed blood have generally low type, and the other is most middle type.

7) Lip:

I observed by Martin's Schema. The profiles of it are generally light-projected, and strong projected or puffed out lip are a few.

8) Ear:

The form of ear Lobe is classified by Hans Bonewitz's method, but I described here only the form of outline curve and the sticked condition of ear lap. I divided the form of outline curve into two parts (each three points) as follows;

upper part:      straight=1      bowed=2      mound=3  
side part:        convex=1      straight=2      concurve=3

Describing in order of upper and side, 31,32 type are most general (50,52), 21 type are next (23), Darwin's Tuberculum auriculae were shown 14.3% of all members. This character especially appeared in S-E-Pp mixed blood.

As to the sticked condition of ear lap, hanging down form is 14.9%, partially sticked form 44.8%, closely sticked form 37.4% and besides unsymmetrical form is 2.9%.

9) Blood type:

Owing to quantity of serum I investigated only S-E-Pp family. In the investigated member 69, A types are 36 (52.2%). B are 7(10.1%), O are 24(34.8%), AB are 2(2.9%) and outline of each small families are as follows:

1) Josep, Sulia family	*A - 'O =A	4
	O	5
2) Ueliam, Metirain family	*O - 'B =B	4
	A	6
3) Rut, Sale family	'A - *A =O	3
	A	1
4) Elisabet, Tupel family	'A - *O =O	1

5)	Pol, Rut family	*A - 'B = A	1
6)	Toonis, Siana family	*O - 'O = O	1
		A	2
7)	Perdinan, Elisabet family	*A - 'A = O	1
8)	Amantoj, Karrera family	*A - 'A = A	2
		O	1
9)	Sopi, Jowanij family	'A - *B = A	2
		O	1
		AB	2
10)	Utinel, Ijabela family	*A - 'O = O	1
11)	Etmona, Pruno family	'A - *O = A	2
12)	Pilorentia, Rekuet family	'A - *O = A	1
		O	2

As the members are not enough, I couldn't give the decisive ratio of Mendelian law.

10) Finger print:

I will describe here about S-E-Pp, Pt-S-Pp, Ph-Pt-G-Pp families. Generally speaking, ulnar-loop and whorl are most numerous. Among these there are middle types between ulnar-loop and whorl, and these middle types have many variations. When the parents have the more whorl or loop, their children have the more same finger prints too.

These details will be reported at another chance. The law of its heredity is not decisive but next Table 11 will show us the general trend of these families from a view point of finger-print-Index.

Table 11.

Percentage of three chief finger print types among every mixed blood family and their races:

        
races



racess	number	arch	loop	whorl	Index	reporter
Ponapean	218	1.24	45.32	53.44	117.92	Fukuda
ponapean(spouse)	20	2.51	47.24	50.25	106.37	Shinozaki
S-E-Pp	66	0.46	45.48	54.06	118.87	"
Pt-S-Pp	39	3.62	46.25	50.13	108.39	"
Ph-Pt-G-Pp	6	3.33	58.33	38.34	65.73	"
mixed blood total	111	1.73	46.46	51.81	111.52	"
German	200,000	4.1	65.0	30.8	47.88	Heindl
Spanish	10,000	6.51	63.22	30.27	47.88	Oloriz
Portuguese	1,000	6.4	66.5	27.0	40.60	Lops
English	5,000	4.8	71.4	25.3	35.43	Scot- land Yard

11) Palm print:

I used Wilder's method in this investigation. All printing members are 144, and the palm types are 54. The main types of them are as follows.

7.	5.	5.	5 type	36	8.	6.	5.	5 type	9
7.	5.	5.	3 type	30	10.	9.	6.	5 type	8
11.	9.	7.	5 type	28	9.	-	5.	5 type	7
9.	7.	5.	5 type	28	8.	6.	5.	3 type	7
7.	5.	5.	4 type	12	10.	7.	6.	5 type	6
9.	7.	5.	3 type	11	10.	-	6.	5 type	5
11.	-	7.	5 type	11	9.	9.	5.	5 type	5

According to the study of Schlaginhaufen, the types of 7.5.5.3, 7.5.5.5, 7.7.5.5, 9.9.5.5, are most common in all races of the world, but in my investigated members two types of 7.7.5.5, 9.9.5.5. are few.

The condition between fingers are described in order of 2nd, 3rd, 4th inter finger part, and I use the sign of S(hoof form), V(vestige), O(nothing). All numbers are 15 types, and the main types of them are as follows;

0 - 0 - S type	161	S - S - S type	8
0 - 0 - O type	48	0 - 0 - V type	4
0 - S - O type	36	S - O - S type	3
0 - S - S type	12	0 - S - V type	3

As

As you see, O-O-S type is most general.  
In the ball part of thumb and little finger, the  
main types are:

O. O type	181	V. S type	6
O. S type	59	O. V type	5
V. O type	17	S. S type	4
S. O type	9		

and O.O type are most general.

12) Somatometric articles:

Concerning to somatometric articles, I compare the  
growing people of S-E-Pp and Pt-S-Pp measurements  
with Prof. Hasebe's data about Ponapean. These are  
on Table 12.

Table 12. Somatometric measurement value compared  
with that of Prof. Hasebe.

article	race	n	*M±m	n	+M±m
maximum	Ponapean	150	192.8±0.46	43	183.8±0.81
head-	S-E-Pp	18	191.7±1.89	19	181.3±1.76
length	Pt-S-Pp	12	191.2±1.76	5	185.8±0.96
(mm)					
maximum	Ponapean	150	142.1±0.36	45	136.5±0.61
head-	S-E-Pp	18	142.3±0.72	19	139.4±1.22
breadth	Pt-S-Pp	12	143.6±1.21	5	140.0±2.14
(mm)					
maximum	Ponapean	150	135.0±0.37	43	125.6±0.55
inter-	S-E-Pp	18	127.0±1.68	19	118.4±1.22
zygomatic	Pt-S-Pp	12	134.3±2.06	5	128.0±1.81
breadth					
(mm)					
minimum	Ponapean	150	96.5±0.35	43	93.1±0.60
forhead	S-E-Pp	18	96.3±0.89		95.2±0.87
breadth	Pt-S-Pp				
(mm)					
maximum	Ponapean	150	102.3±0.49	43	94.0±0.61
inter-	S-E-Pp	18	103.5±1.16	19	98.5±1.27
mandiblar	Pt-S-Pp	12	99.8±1.57	15	95.6±2.75
breadth					
(mm)					

interocular breadth (mm)	Ponapean	150	33.0+0.23	43	32.3+0.40
	S-E-Pp	18	31.4+0.68	19	30.3+0.39
	Pt-S-Pp	12	31.7+0.98	5	31.8+0.72
external biocular breadth (mm)	Ponapean	18	93.6+1.16	19	92.3+0.99
	S-E-Pp	18	95.8+1.71	5	95.6+1.89
	Pt-S-Pp	12	95.8+1.71	5	95.6+1.89
maximum nose breadth (mm)	Ponapean	150	42.4+0.21	43	37.5+0.38
	S-E-Pp	18	38.4+0.49	19	35.4+0.48
	Pt-S-Pp	12	36.8+0.72	5	36.8+1.11
maximum mouth breadth (mm)	Ponapean	18	47.5+0.63	19	45.5+1.03
	S-E-Pp	18	47.6+0.80		48.4+0.83
	Pt-S-Pp	12	47.6+0.80		48.4+0.83
total face length (mm)	Ponapean	150	126.7+0.56	43	118.7+0.70
	S-E-Pp	18	120.7+1.14	19	112.7+1.04
	Pt-S-Pp	12	128.8+2.16	5	120.0+0.85
nose height (mm)	Ponapean	150	59.5+0.32	43	56.7+0.48
	S-E-Pp	18	51.8+0.66	19	49.8+0.98
	Pt-S-Pp	12	55.8+0.94	5	52.0+0.77
physiognomic ear length (mm)	Ponapean	18	62.3+0.88	19	58.6+0.71
	S-E-Pp	18	62.3+0.88	19	58.6+0.71
	Pt-S-Pp	12	63.4+1.72	8	57.4+0.83
morphological ear breadth (mm)	Ponapean	18	50.0+1.17	19	48.5+0.74
	S-E-Pp	18	50.0+1.17	19	48.5+0.74
	Pt-S-Pp	12	53.0+1.62	8	47.5+0.87
standing height (mm)	Ponapean	150	162.1+0.40	43	152.0+0.77
	S-E-Pp	17	164.3+1.30	19	152.8+1.52
	Pt-S-Pp	12	171.4+1.94	5	158.4+0.63

span of arms (mm)	Ponapean	149	170.2±0.50	42	155.0±0.99
	S-E-Pp	17	169.6±1.72	18	155.9±1.65
	Pt-S-Pp	10	184.4±1.75		
sitting height (mm)	Ponapean				
	S-E-Pp	17	83.0±0.63	17	78.4±1.18
	Pt-S-Pp	12	86.4±1.31	5	82.4±0.70
length of upper limb (mm)	Ponapean	148	73.6±0.24	40	67.4±0.45
	S-E-Pp	17	73.8±0.77	18	69.1±0.92
	Pt-S-Pp	11	79.5±1.12		
breadth of shoulders (mm)	Ponapean	150	36.4±0.31	43	32.7±0.18
	S-E-Pp	17	36.1±0.41	19	32.0±0.45
	Pt-S-Pp	10	39.4±0.42		
total head height (mm)	Ponapean	150	22.1±0.07	43	20.8±0.10
	S-E-Pp	17	22.7±0.39	19	21.0±0.23
	Pt-S-Pp	12	22.8±0.43	4	22.0±0.45

### Conclusion

The outline of my investigation is above mentioned. And its summary is that, through all members of mixed blood, they are losing the European character in accordance with generations. This problem that is so called the out-mixing phenomena of blood should be re-examined from a view point of heredity.

According to my investigation the study of unsymmetry and the growth of their characters is the most important problem.

But I think that many other researches than pure biology are requested in such mixed blood families as these. Namely the trend must be researched synthetically from genetics, environment, and etc.

死因別死亡率

日本の死亡率が「寛政」の4に過ぎない  
死亡率が「どういふ年か」と「どういふ時向か」を尋ねる。

出生率

It is cloudy

It is much rainy

Kubota

1314陽春  
全年  
7  
2  
1  
3  
8000

出子