88. A Case of Triplets in Shirakawa

By Yoshito FURUYA, Takashi TANAKA, and Mitsuo YOKOYAMA

Department of Legal Medicine, School of Medicine, Tokyo Medical
and Dental University

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The present report is concerned with the observation on blood groups and types, fingerprint patterns, palm patterns, and soleprint patterns of triplets, born in Shirakawa, Fukushima prefecture.

They were born on Feb. 19, 1955. The mother (S. K.), age 32, and her husband (K. K.), age 37, are both in normal health. There are no hereditary multiple pregnancy and malformation in the family before.

They have a daughter, 9 years old. The triplets were born in the second delivery. In spite of being a premature delivery (the term of pregnancy: 32 weeks), the triplets are all well now (Table I).

Table I. Observations on the children

	Gener- ation		Name	Age	Sex	Height	Weight	Circum- ference of chest
1st child	FII	2	Yoshio KAWAGUCHI	3	♂	97.8 cm	17 kg	55.5 cm
2nd child		3	Kin-ya KAWAGUCHI	3	♂	97 cm	15.5 kg	55 cm
3rd child		4	Yasuhiro KAWAGUCHI	3	♂	94 cm	14.8 kg	50 cm

Sitting height	Character	Ear- wax	Mid-digital hair	Taste-ability for phenyl- thio-carbamide	Handed- ness	Illness
57 cm	vigorous	wet	(-)	(-)	right	Hernia inguinalis bilateralis
57 cm	vigorous	wet	(-)	(-)	right	Hernia inguinalis bilateralis
55.5 cm	meek	wet	(-)	(-)	right	(-)

All the family members were tested for the following blood group systems, i.e. ABO, MN, Q, ST, Lewis, Rh-Hr, Kell, and Duffy. They are all of the "O" blood group. The blood groups and types of two of the triplets (II-2, II-3) are identical, but the third triplet (II-4) has different types of MN and Rh-Hr blood types than the other (II-2, II-3).

Table II. Blood groups and types of the family

Generation		Name	Age	Sex	ABO blood group	MN blood type	Q blood type
F _I	1	Kenji KAWAGUCHI	37	♂	O	MN	q
	2	Shizuko KAWAGUCHI	32	♀	O	MN	q
F _{II}	1	Yûko KAWAGUCHI	9	♀	O	N	q
	2	Yoshio KAWAGUCHI	3	♂	O	M	q
	3	Kin-ya KAWAGUCHI	3	♂	O	M	q
	4	Yasuhiro KAWAGUCHI	3	♂	O	N	q

S and T blood system	Lewis blood system	Rh-Hr blood type	Kell blood type	Duffy blood type	Agglutinin
St	Le (a—)	CC:D:ee	kk	Fy (a+)	$\alpha:64 \times \beta:64 \times$
St	Le (a—)	Cc:D:Ee	kk	Fy (a+)	$\alpha:256 \times \beta:256 \times$
St	Le (a—)	Cc:D:Ee	kk	Fy (a+)	$\alpha:256 \times \beta:256 \times$
St	Le (a—)	CC:D:ee	kk	Fy (a+)	$\alpha:64 \times \beta:128 \times$
St	Le (a—)	CC:D:ee	kk	Fy (a+)	$\alpha:64 \times \beta:128 \times$
St	Le (a—)	Cc:D:Ee	kk	Fy (a+)	$\alpha:64 \times \beta:64 \times$

The fingerprint patterns,^{*)} palm patterns,^{**)} and soleprint patterns^{***)} are shown in Tables III, IV, and V. In these investigations, it was observed that two of the triplets (II-2, II-3) are exactly alike in all respects, but the other triplet (II-4) is slightly different in some respects.

According to these observations, the first child (II-2) and the second child (II-3) are proved to be monozygotic twins, while the third child (II-4) is proved to be dizygotic from each of the other two. Therefore, the triplets are proved to be dizygotic.

^{*)} Fingerprints are classified into three groups, an arch (A), a loop (L), and a whorl (W). The loop is divided into two types, a radial loop (R) and an ulnar loop (U). The whorl is divided into three types, inner, meeting, and outer. The biological value of fingerprints (b.V.) and its genotypes are calculated according to Matsukura's¹⁾⁻⁶⁾ genetic classification (1950). Furthermore, the genotypes are determined by calculation of papillary ridges using Matsukura's⁷⁾⁻⁸⁾ method (1952).

^{**) Palm patterns are classified by using Cummins-Midlo's⁹⁾ method.}

^{***) Soleprint patterns are classified by using Wentworth-Wilder's¹⁰⁾ method.}

Fig. 1. A family line of KAWAGUCHI (blood groups and types)

Fig. 2. A family line of KAWAGUCHI (fingerprints)

Fig. 3. A family line of KAWAGUCHI (handprints)

Table III. Fingerprint patterns

Generation		Name	Age	Sex		Thumb (1st)	Index finger (2nd)	Middle finger (3rd)	Ring finger (4th)	Little finger (5th)
F _I	1	Kenji KAWAGUCHI	37	♂	L	W	U	U	W	W
	2	Shizuko KAWAGUCHI	32	♀	L	A	U	U	U	W
F _{II}	1	Yûko KAWAGUCHI	9	♀	L	U	R	U	W	U
	2	Yoshio KAWAGUCHI	3	♂	L	W	R	W	W	W
	3	Kin-ya KAWAGUCHI	3	♂	L	W	R	W	W	W
	4	Yasuhiro KAWAGUCHI	3	♂	L	U	U	U	U	U

	Fingerprints value in "Japanese Judicial Fingerprint System"	Biological value of fingerprints (b. V.) (MATSUKURA)	Quantitative value of papil- lary ridges (MATSUKURA)
$U_2W_3 = R_1U_3W_6$	7 6 6 7 7 8 2 6 9 9	252 (V)	193 (V)
$A_1U_3W_1 = A_2U_7W_1$	1 3 5 5 8 1 3 4 5 3	168 (II)	70 (II)
$R_1U_3W_1 = R_1U_5W_4$	5 2 6 7 4 6 8 9 9 3	234 (IV)	161 (IV)
$R_1W_4 = R_1W_9$	7 2 7 7 7 7 7 8 8 9	270 (V)	227 (VI)
$R_1W_4 = R_1U_1W_8$	7 2 8 8 7 9 8 6 7 9	264 (V)	215 (VI)
$U_5 = U_{10}$	5 4 5 5 4 6 4 6 5 3	180 (II)	120 (III)

Table IV. Palm patterns

Genera- tion		Name	Age	Sex
FI	1	Kenji KAWAGUCHI	37	♂
	2	Shizuko KAWAGUCHI	32	♀
FII	1	Yûko KAWAGUCHI	9	♀
	2	Yoshio KAWAGUCHI	3	♂
	3	Kin-ya KAWAGUCHI	3	♂
	4	Yasuhiro KAWAGUCHI	3	♂

Handprints	
Left hand	Right hand
9·7 ·5' ·3·t·A ^u ·L/O·O·O·l	7·5''·5' ·3·t·A ^u ·L/O·O·O·L
11·×·7 ·3·t'·A ^u ·O/O·O·O·O	9·7 ·5''·3·t·A ^u ·O/O·O·O·l
9·7 ·5''·3·t·A ^u ·O/O·O·O·L	7·5''·5''·3·t·A ^u ·O/O·O·O·L
7·5''·5' ·3·t·A ^u ·O/O·O·O·l	7·5''·5' ·3·t·A ^u ·O/O·O·O·L
7·5''·5' ·3·t·A ^u ·L/L·O·O·l	7·5''·5''·3·t·A ^u ·O/O·O·O·L
7·5''·5''·3·t·A ^u ·O/O·O·O·l	9·7 ·5''·3·t·A ^u ·O/O·O·O·L

Table V. Soleprint patterns

	Name	Age	Sex	Soleprints	
				Left foot	Right foot
1st child	Yoshio KAWAGUCHI	3	♂	W·O·O·O	W·O·O·O
2nd child	Kin-ya KAWAGUCHI	3	♂	W·O·O·O	W·O·O·O
3rd child	Yasuhiro KAWAGUCHI	3	♂	W·O·U·O·d	W·Ω·U·O·d

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