

SUPPLEMENTARY MATERIAL

From groups to communities in western lowland gorillas

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SUPPLEMENTARY METHODS

Parentage analyses and genealogy reconstruction

We estimated relatedness (r) between individual genotypes with COANCESTRY [39]. We tested the performance of different estimators by simulating 1000 pairs of individuals with different degrees of relatedness: parent-offspring, full-siblings, half-siblings and unrelated individuals. The expected relatedness values r for such categories are 0.5 (for parent-offspring and full-sibling), 0.25 (half-siblings) and 0 (unrelated individuals). Simulations were performed based on observed allele frequencies and rates of missing data, allelic dropout and false alleles. Correlation among the estimators was assessed with Pearson's product-moment correlation coefficients (table S2). Due to stochastic differences among loci in the probability of identity by descent and identity by state [70,71], relatedness estimations are typically characterised by large variances. Since there is no consensus on how to select the best performing estimator [39], a dual approach was used. The dyadic likelihood estimator (DyadML) [72] was selected because i) it displayed one of the highest correlations to the true value [39] (table S2) and ii) the estimates were closest to the expected r values (and the variance was lower than for other estimators) [73-76] (table S3). On the other hand, the Lynch and Ritland moment estimator (LynchRD) [77] was the best performing across simulated dyads of unrelated individuals (table S3) and was also used for comparative purposes. The use of complementary estimators with different features helps assess the reliability of relatedness estimates when they involve dyads falling into different kinship categories [78]. While DyadML performs fairly well when large numbers of highly polymorphic makers are available, LynchRD is better tailored to less related individuals as it is more responsive to rare alleles [39]. Nevertheless, the two approaches gave practically identical results, as expected in the case of a robust dataset with a large variance in relatedness values. Values reported in the manuscript correspond to DyadML. In addition to point estimates, we also calculated 95% confidence intervals (CI) of r by bootstrapping over loci (5000 replicates).

Since identical relatedness values are expected for full siblings and for parent-offspring pairs, dyadic relatedness values were complemented with genealogy reconstruction to differentiate the two possibilities. This was done using the software COLONY [40], which infers both putative parents simultaneously. Paternity and maternity were assigned with a duo or trio confidence score >90% and allowing no more than one locus mismatch. Distinction between parent-offspring and full-sibling dyads was fully assessed only if both parents were available and/or considering socio-ecological information about WLG. For example, natal dispersal makes unlikely the occurrence of full-sibling adult males in the same breeding group, suggesting parent-offspring relationships; pre-dispersal females (daughters of the silverback) are most likely not to have produced any offspring yet. Presumed age class as inferred in the field was also taken into account. However, due to the difficulties associated with this age class identification based on the size of the faeces, all individuals initially thought to be immatures were included in the analysis datasets both as candidate parent and as candidate offspring.

Relatedness distribution

We explored the distribution of pairwise relatedness estimates by means of permutation analyses (10000 permutations) implemented in *ad hoc* Microsoft Excel macros developed by Lukas *et al.* [41]. Specifically, we tested whether presence of kin drives adult female association to groups by comparing relatedness between adult females within groups with those for random pairs of females. Relatedness values for within-group adult male-female dyads were also compared to values generated by random draws to check whether males and females within groups were less related than expected by chance. A similar analysis was also run to check if resident group-leading silverbacks were more related to each other than to males sampled outside groups. For all these tests we removed pre-dispersal offspring by excluding all individuals sharing an allele at every locus with the silverbacks and/or breeding females in the same group as in Arandjelovic *et al.* [43]. The remaining adult individuals (females) were retained only if displaying a pairwise $r < 0.25$ with breeding females from the same group to avoid mother-daughter pairs. This was assumed as indirect evidence of their status as immigrants and potentially sexually mature. All individuals sampled alone were kept for these analyses. All tests were carried out under a simplified model of random dispersal because of the relatively small study area, lack of physical barriers and potentially high home range overlap between groups. We used Mantel tests (with 10000 permutations) to check for possible linear

correlation between geographic distance and genetic relatedness in (i) adult males (silverbacks in groups and males found alone) and (ii) adult females (excluded as offspring in pedigree reconstructions and not indicated as likely immature in the field). However, Mantel tests assume a continuous linear change between the variables under consideration and this may not be necessarily be the case. In order to take into account a possible cryptic geographical substructure, a dedicated permutation analysis was run as in Lukas *et al.* [41]. This test aimed at identifying a distance up to which individuals tended to be more genetically related.

FIGURES

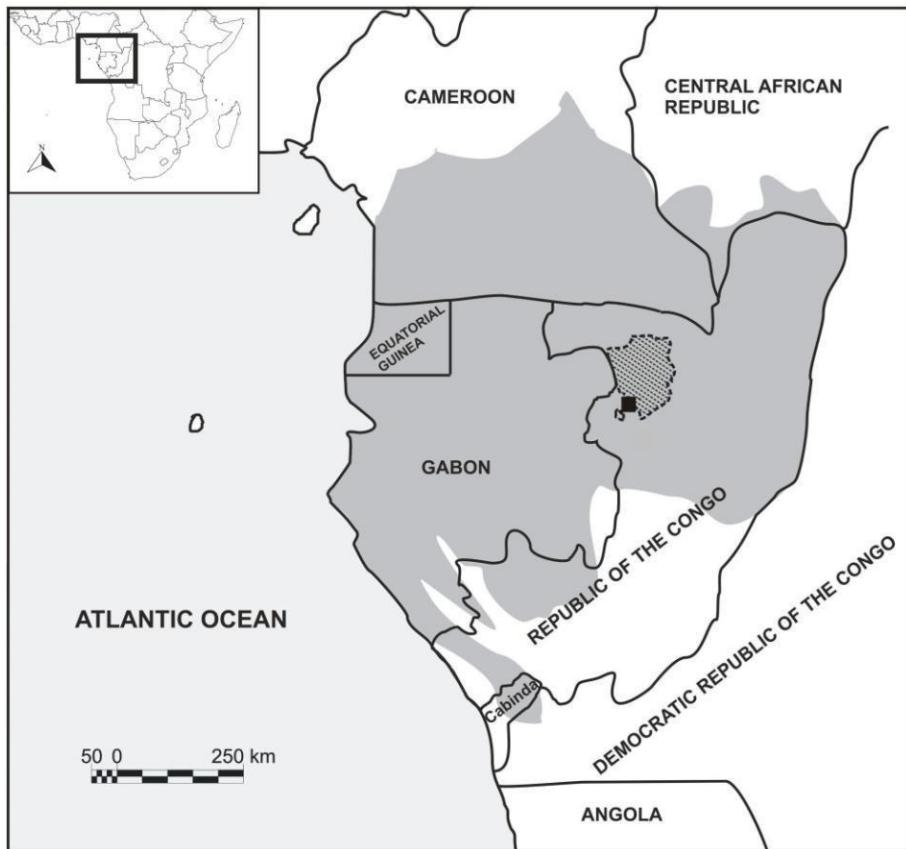


Figure S1. Study area. Ngaga Forest (black square) is located between two protected areas (shaded shapes: Odzala-Kokoua National Park and Lossi Sanctuary, above and below, respectively). The distribution range of western lowland gorilla across western equatorial Africa is marked in grey (<http://www.iucnredlist.org/> accessed 30/07/2017).

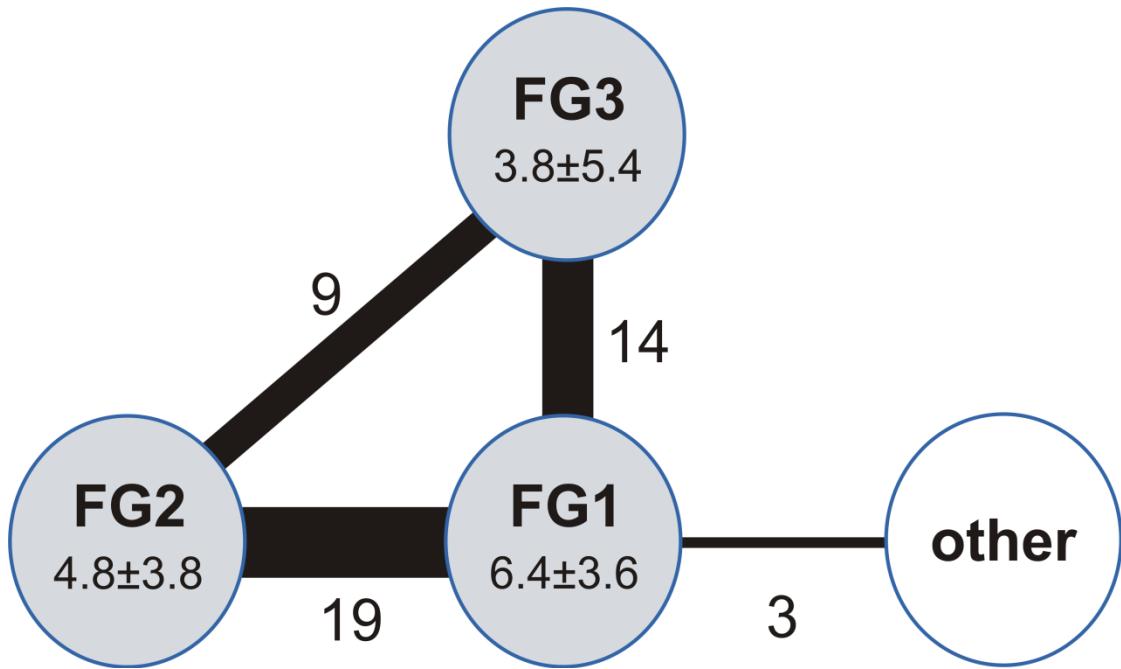


Figure S2. Observed encounters between three focal groups (FG) of western lowland gorilla monitored during 2013-2017. Numbers by links represent the total number of interactions observed. Numbers within group symbols are the average number of interactions in which the group was involved per year (\pm standard deviation). Interactions that involve more than two groups are included on multiple nodes. *Other* represents observed interactions with unknown non-habituated groups. Due to the limited visibility within the forest (and the difficult access to non-habituated gorilla groups), these are underestimates of the real encounter rate between the groups.

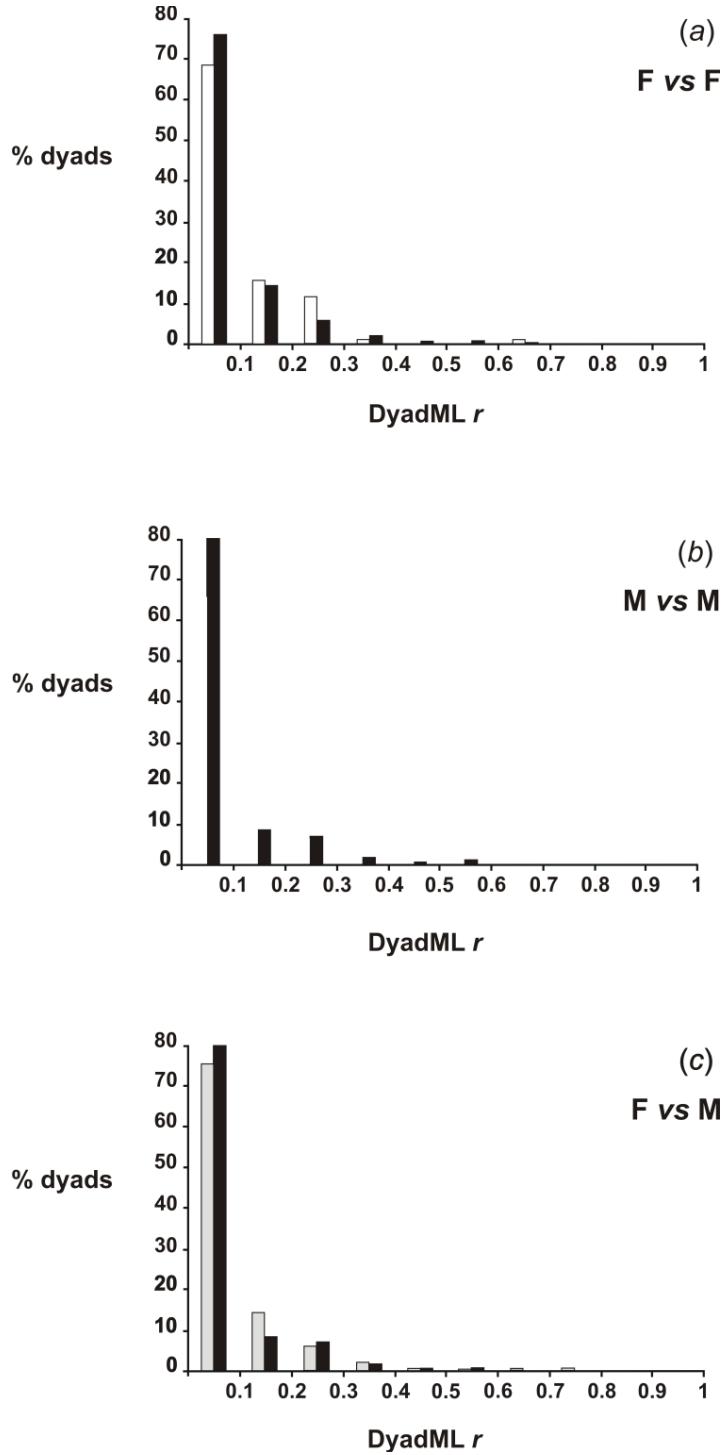


Figure S3. Distribution of pairwise estimates of relatedness. (a) Relatedness between adult females (F). (b) Comparisons between adult males (M). (c) Relatedness in the two sexes (M in black vs F in grey). Values within- and between- social units are represented by white and black bars for females in (a); for males only one adult male was usually found in each group and we only show values between social units. Offspring and immature individuals were excluded from the analysis. Distribution of relatedness values in the population is similar for adult males and females, showing that there are no large differences in the dispersal patterns.

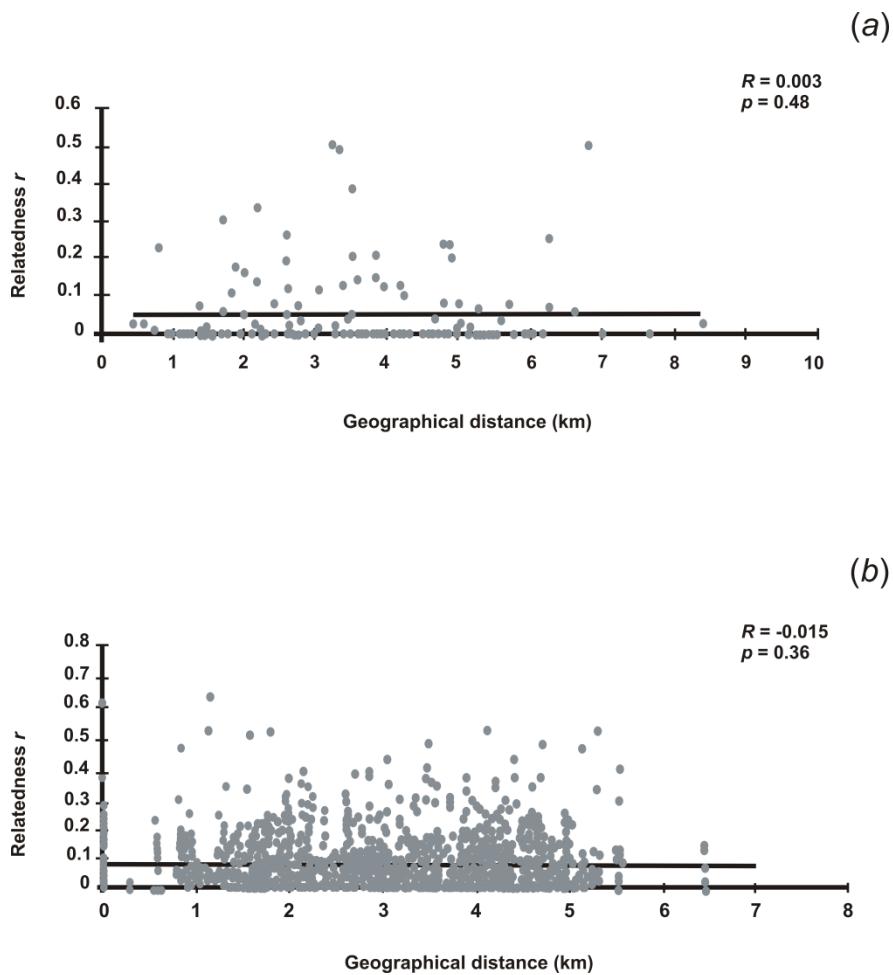


Figure S4. Genetic relatedness r vs geographic distance assessed with Mantel tests. (a) Relatedness across adult males including silverbacks leading groups plus roaming males always sampled alone ($n=17$). (b) Relatedness across adult females ($n=45$). All pre-dispersal offspring are excluded from this comparisons [41,43]. No patterns of differentiation by distance were observed between males or between females within the study area.

TABLES

Table S1. Examples of interactions during the encounters of focal gorilla groups (FG). Distances between groups were defined as those between the closest individuals from different groups excluding those engaging in interactions.

Date and time	FG involved	
March 8, 2017 8:00-9:35	FG2, FG3	One adolescent from FG1 and one adolescent from FG3 engaged in social play by alternatively approaching the two groups (approximate distance between the two groups: 35 meters).
July 14, 2017 7:10-8:24	FG1, FG2, FG3	Social play of immature individuals of the three groups (groups located about 20 m from each other). The silverback of FG1 was closely monitoring their activities. At the same time, adolescents from all groups were playing under the vigilance of the silverback of FG2. At a distance of about 20 m, a female of FG1 and a female of FG2 were sitting close to the silverback of FG3.
August 22, 2017 9:18-10:19	FG1, FG2, FG3	Assembly of three groups with all individuals (silverbacks, adult females and immature individuals) intermixed and moving together along an open trail at distances of 4 m or less (with silverbacks staying 5 to 10 m apart from one another). While travelling, we observed adult-adult social play (<i>move to, huddle, hit, touch</i>) between four adult females (one from FG1, two from FG2 and one from FG3). In addition, their offspring played with each other: <i>hit, pull, run</i> , and <i>drum</i> on a partner's body.

Table S2. Pearson's product-moment correlation coefficients between relatedness estimators and between them and the true relatedness as simulated in COANCESTRY. In bold, correlation between the estimator chosen for the analyses and the true relatedness values.

Correlation coefficient	TrioML	Wang	LynchLi	LynchRD	Ritland	QuellerGT	DyadML	True Value
TrioML	1							
Wang	0.927	1						
LynchLi	0.924	0.973	1					
LynchRD	0.822	0.793	0.782	1				
Ritland	0.623	0.558	0.563	0.836	1			
QuellerGT	0.934	0.945	0.972	0.797	0.589	1		
DyadML	0.994	0.933	0.931	0.825	0.628	0.940	1	
True Value	0.823	0.781	0.779	0.692	0.525	0.776	0.822	1

Table S3. Average r values and associated standard deviation across dyads of simulated genotypes. Kinship categories: HS, half siblings; FS, full siblings; PO, parent-offspring; UR, unrelated. Values considered for the chosen estimator are marked in bold.

Kinship	TrioML	Wang	LynchLi	LynchRD	Ritland	QuellerGT	DyadML	True value
HS	0.198 ± 0.016	0.161 ± 0.020	0.169 ± 0.021	0.172 ± 0.025	0.224 ± 0.086	0.194 ± 0.020	0.241 ± 0.018	0.25
FS	0.411 ± 0.020	0.373 ± 0.020	0.383 ± 0.020	0.354 ± 0.035	0.457 ± 0.152	0.394 ± 0.021	0.460 ± 0.020	0.5
PO	0.413 ± 0.010	0.370 ± 0.013	0.378 ± 0.014	0.345 ± 0.028	0.433 ± 0.122	0.388 ± 0.013	0.456 ± 0.010	0.5
UR	0.043 ± 0.003	-0.051 ± 0.019	-0.050 ± 0.021	-3.1x10⁻⁴ ± 0.009	0.004 ± 0.020	-0.015 ± 0.017	0.058 ± 0.007	0

Table S4. Relatedness estimates for individuals moving between groups and those in the source and destination groups. Values referring to first-degree relatives are given in bold. S: sex; *r*: relatedness.

S	Group of origin	<i>r</i>	New group	<i>r</i>
F	G7	0,0,0	G6	0,0
F	G8	0,0,03,0,06,0,0,12,0,16,0,22, 0,57	G16	0,0,0,0,0,06
M	G8	0,0,0,02,0,11,0,11,0,13,0,27,0,19	G7	0,0,22, 0,52
M	G16	0,0,01,0,04,0,06	G3	0,0,0,0,0,01,0,14,0,22,0,26,0,32, 0,5,0,54,0,60,0,66
F	Sampled alone	-	G6	0,0
M	Sampled alone	-	G5	0,0,2
M	Sampled alone	-	G10	0,03,0,17,0,18,0,23,0,23,0,33,0,44,0,48, 0,5
M	Sampled alone	-	G3	0,03,0,06,0,06,0,04,0,04,0,05,0,11,0,31,0,32,0,46, 0,48,0,5,0,5

VIDEOS

Video S1. Encounter of two groups of western lowland gorillas. Ngaga camp, Mbomo, Cuvette-Ouest, Republic of Congo; 21st of December 2015. The meeting lasted for several hours. The event was recorded by a camera trap used for automatic wildlife monitoring. The two groups are not habituated, but they are identified by some recognisable individuals known from their repeated appearance in videos recorded in different automatic cameras. The camera covers a small field of view, offering only a partial image of the area. Cameras are set to record videos for 30 seconds when there is activity within their field of view. We provide four videos showing some typical interactions between juveniles and the vigilant attitude of some adults.

<https://www.flickr.com/gp/revillaeloy/T55d36>

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DATASETS

Dataset S1. Geographic coordinates, collection date and corresponding genotype of the 279 faecal gorilla samples analysed in this study. ID: identifier.

n	ID sample	Longitude	Latitude	Date	ID genotype
1	S1	14,5977200	0,4200600	11/05/2013	G1
2	S2	14,5989100	0,4157900	11/05/2013	G2
3	S3	14,5995600	0,4223700	13/05/2013	G3
4	S4	14,5995600	0,4223700	13/05/2013	G4
5	S5	14,5995600	0,4223700	13/05/2013	G5
6	S6	14,5995600	0,4223700	13/05/2013	G6
7	S7	14,5995600	0,4223700	13/05/2013	G7
8	S8	14,5995600	0,4223700	13/05/2013	G7
9	S9	14,5995600	0,4223700	13/05/2013	G7
10	S10	14,5995600	0,4223700	13/05/2013	G7
11	S11	14,5995600	0,4223700	13/05/2013	G21
12	S12	14,5995600	0,4223700	13/05/2013	G4
13	S13	14,5995600	0,4223700	13/05/2013	G5
14	S14	14,5995600	0,4223700	13/05/2013	G5
15	S15	14,5995600	0,4223700	13/05/2013	G15
16	S16	14,5995600	0,4223700	13/05/2013	G16
17	S17	14,5995600	0,4223700	13/05/2013	G17
18	S18	14,5995600	0,4223700	13/05/2013	G23
19	S19	14,5995600	0,4223700	13/05/2013	G23
20	S20	14,5995600	0,4223700	13/05/2013	G20
21	S21	14,5995600	0,4223700	13/05/2013	G21
22	S22	14,5995600	0,4223700	13/05/2013	G22
23	S23	14,5995600	0,4223700	13/05/2013	G23
24	S24	14,5995600	0,4223700	13/05/2013	G26
25	S25	14,5995600	0,4223700	13/05/2013	G27
26	S26	14,5995600	0,4223700	13/05/2013	G26
27	S27	14,5995600	0,4223700	13/05/2013	G27
28	S28	14,5995600	0,4223700	13/05/2013	G2
29	S31	14,6004500	0,3862600	31/05/2013	G247
30	S32	14,5956500	0,3884900	01/06/2013	G32
31	S33	14,5806600	0,4182800	02/06/2013	G220
32	S34	14,5778700	0,3854500	04/06/2013	G34
33	S35	14,5778700	0,3854500	04/06/2013	G34
34	S36	14,5778700	0,3854500	04/06/2013	G36
35	S37	14,5778700	0,3854500	04/06/2013	G37
36	S38	14,5778700	0,3854500	04/06/2013	G38
37	S39	14,5778700	0,3854500	04/06/2013	G39
38	S45	14,6144900	0,4039100	05/06/2013	G214
39	S46	14,6144900	0,4039100	05/06/2013	G214
40	S47	14,6144900	0,4039100	05/06/2013	G214
41	S48	14,61444000	0,4039400	05/06/2013	G214

42	S49	14,6144000	0,4039400	05/06/2013	G214
43	S50	14,6143800	0,4039000	05/06/2013	G214
44	S51	14,6145900	0,4017900	05/06/2013	G51
45	S52	14,6100600	0,4010000	05/06/2013	G210
46	S53	14,5880800	0,3735700	05/06/2013	G53
47	S54	14,5880800	0,3735700	05/06/2013	G54
48	S55	14,5880800	0,3735700	05/06/2013	G55
49	S56	14,5880800	0,3735700	05/06/2013	G57
50	S57	14,5880800	0,3735700	05/06/2013	G57
51	S58	14,5880800	0,3735700	05/06/2013	G58
52	S59	14,5880800	0,3735700	05/06/2013	G59
53	S60	14,5880800	0,3735700	05/06/2013	G60
54	S61	14,5880800	0,3735700	05/06/2013	G61
55	S62	14,6019400	0,3696500	06/06/2013	G62
56	S63	14,6019400	0,3696500	06/06/2013	G63
57	S64	14,6019400	0,3696500	06/06/2013	G165
58	S65	14,6019400	0,3696500	06/06/2013	G65
59	S66	14,6019400	0,3696500	06/06/2013	G66
60	S67	14,6019400	0,3696500	06/06/2013	G168
61	S68	14,6019400	0,3696500	06/06/2013	G122
62	S69	14,6019400	0,3696500	06/06/2013	G69
63	S70	14,6019400	0,3696500	06/06/2013	G62
64	S71	14,6019400	0,3696500	06/06/2013	G71
65	S72	14,6264400	0,3890400	09/06/2013	G51
66	S73	14,6264400	0,3890400	09/06/2013	G200
67	S74	14,6264400	0,3890400	09/06/2013	G199
68	S75	14,6264400	0,3890400	09/06/2013	G75
69	S76	14,6264400	0,3890400	09/06/2013	G51
70	S77	14,6264400	0,3890400	09/06/2013	G197
71	S78	14,6264400	0,3890400	09/06/2013	G78
72	S79	14,6264400	0,3890400	09/06/2013	G79
73	S80	14,6264400	0,3890400	09/06/2013	G205
74	S81	14,6264400	0,3890400	09/06/2013	G81
75	S82	14,6264400	0,3890400	09/06/2013	G196
76	S83	14,6264400	0,3890400	09/06/2013	G83
77	S84	14,6264400	0,3890400	09/06/2013	G83
78	S85	14,6264400	0,3890400	09/06/2013	G198
79	S86	14,6264400	0,3890400	09/06/2013	G198
80	S87	14,6178400	0,3983300	09/06/2013	G103
81	S88	14,6178600	0,3987300	09/06/2013	G88
82	S89	14,6178000	0,3989000	09/06/2013	G99
83	S90	14,6116200	0,3903700	10/06/2013	G101
84	S91	14,6205700	0,3985500	10/06/2013	G91
85	S92	14,6205700	0,3985500	10/06/2013	G88
86	S93	14,6205700	0,3985500	10/06/2013	G93
87	S94	14,6205700	0,3985500	10/06/2013	G94
88	S95	14,6205700	0,3985500	10/06/2013	G95
89	S96	14,6205700	0,3985500	10/06/2013	G96
90	S97	14,6205700	0,3985500	10/06/2013	G261
91	S98	14,6205700	0,3985500	10/06/2013	G98
92	S99	14,6205700	0,3985500	10/06/2013	G99

93	S100	14,6195400	0,3932200	13/06/2013	G100
94	S101	14,6195400	0,3932200	13/06/2013	G101
95	S102	14,6195400	0,3932200	13/06/2013	G102
96	S103	14,6195400	0,3932200	13/06/2013	G103
97	S104	14,5748200	0,3974900	14/06/2013	G104
98	S105	14,5748200	0,3974900	14/06/2013	G105
99	S106	14,5748200	0,3974900	14/06/2013	G105
100	S107	14,5748200	0,3974900	14/06/2013	G107
101	S108	14,5748200	0,3974900	14/06/2013	G108
102	S109	14,5748200	0,3974900	14/06/2013	G109
103	S110	14,5748200	0,3974900	14/06/2013	G110
104	S111	14,6162800	0,4061700	15/06/2013	G214
105	S112	14,6163900	0,4063200	15/06/2013	G215
106	S113	14,6164600	0,4064800	15/06/2013	G214
107	S114	14,6186500	0,4036100	15/06/2013	G261
108	S116	14,5811000	0,4032200	17/06/2013	G116
109	S117	14,5811000	0,4032200	17/06/2013	G188
110	S118	14,5811000	0,4032200	17/06/2013	G118
111	S119	14,5811000	0,4032200	17/06/2013	G165
112	S120	14,5811000	0,4032200	17/06/2013	G122
113	S121	14,5811000	0,4032200	17/06/2013	G122
114	S122	14,5811000	0,4032200	17/06/2013	G122
115	S123	14,5811000	0,4032200	17/06/2013	G62
116	S124	14,5811000	0,4032200	17/06/2013	G168
117	S127	14,5912200	0,3909400	18/06/2013	G165
118	S128	14,5912200	0,3909400	18/06/2013	G165
119	S129	14,5912200	0,3909400	18/06/2013	G129
120	S130	14,5912200	0,3909400	18/06/2013	G130
121	S131	14,5912200	0,3909400	18/06/2013	G122
122	S132	14,5912200	0,3909400	18/06/2013	G62
123	S133	14,5912200	0,3909400	18/06/2013	G188
124	S134	14,5912200	0,3909400	18/06/2013	G134
125	S135	14,5912200	0,3909400	18/06/2013	G135
126	S136	14,5912200	0,3909400	18/06/2013	G168
127	S137	14,5912200	0,3909400	18/06/2013	G66
128	S138	14,6111300	0,4108700	19/06/2013	G210
129	S139	14,6349100	0,4071600	19/06/2013	G160
130	S140	14,6349100	0,4071600	19/06/2013	G140
131	S141	14,6349100	0,4071600	19/06/2013	G141
132	S142	14,6349100	0,4071600	19/06/2013	G149
133	S143	14,6349100	0,4071600	19/06/2013	G154
134	S144	14,6349100	0,4071600	19/06/2013	G150
135	S145	14,6465500	0,3981200	20/06/2013	G140
136	S146	14,6465500	0,3981200	20/06/2013	G140
137	S147	14,6465500	0,3981200	20/06/2013	G140
138	S148	14,6465500	0,3981200	20/06/2013	G148
139	S149	14,6465500	0,3981200	20/06/2013	G149
140	S150	14,6465500	0,3981200	20/06/2013	G150
141	S151	14,6465500	0,3981200	20/06/2013	G152
142	S152	14,6465500	0,3981200	20/06/2013	G152
143	S153	14,6465500	0,3981200	20/06/2013	G155

144	S154	14,6465500	0,3981200	20/06/2013	G154
145	S155	14,6465500	0,3981200	20/06/2013	G155
146	S156	14,6465500	0,3981200	20/06/2013	G156
147	S157	14,6465500	0,3981200	20/06/2013	G141
148	S158	14,6465500	0,3981200	20/06/2013	G158
149	S159	14,6465500	0,3981200	20/06/2013	G160
150	S160	14,6465500	0,3981200	20/06/2013	G160
151	S162	14,5790800	0,3978500	22/06/2013	G62
152	S163	14,5790800	0,3978500	22/06/2013	G163
153	S164	14,5880300	0,4123000	23/06/2013	G165
154	S165	14,5898200	0,4122000	24/06/2013	G165
155	S166	14,5898200	0,4122000	24/06/2013	G186
156	S167	14,5898200	0,4122000	24/06/2013	G168
157	S168	14,5898200	0,4122000	24/06/2013	G168
158	S169	14,5898200	0,4122000	24/06/2013	G169
159	S170	14,5898200	0,4122000	24/06/2013	G188
160	S171	14,5898200	0,4122000	24/06/2013	G122
161	S172	14,5898200	0,4122000	24/06/2013	G65
162	S173	14,6211400	0,4163700	26/06/2013	G213
163	S174	14,6211400	0,4163700	26/06/2013	G215
164	S175	14,6211400	0,4163700	26/06/2013	G216
165	S176	14,6211400	0,4163700	26/06/2013	G214
166	S177	14,6139400	0,4012400	26/06/2013	G177
167	S178	14,5844600	0,4149300	28/06/2013	G7
168	S179	14,5848400	0,4153800	28/06/2013	G23
169	S180	14,5852300	0,4155300	28/06/2013	G210
170	S182	14,5959600	0,4225500	28/06/2013	G62
171	S183	14,5959600	0,4225500	28/06/2013	G183
172	S184	14,5959600	0,4225500	28/06/2013	G165
173	S185	14,5959600	0,4225500	28/06/2013	G185
174	S186	14,5959600	0,4225500	28/06/2013	G186
175	S187	14,5959600	0,4225500	28/06/2013	G63
176	S188	14,5959600	0,4225500	28/06/2013	G188
177	S189	14,5959600	0,4225500	28/06/2013	G189
178	S190	14,5959600	0,4225500	28/06/2013	G65
179	S191	14,5959600	0,4225500	28/06/2013	G191
180	S192	14,5959600	0,4225500	28/06/2013	G122
181	S193	14,6076400	0,4042400	30/06/2013	G193
182	S194	14,6290800	0,3926500	30/06/2013	G197
183	S195	14,6290800	0,3926500	30/06/2013	G81
184	S196	14,6290800	0,3926500	30/06/2013	G196
185	S197	14,6290800	0,3926500	30/06/2013	G197
186	S198	14,6290800	0,3926500	30/06/2013	G198
187	S199	14,6290800	0,3926500	30/06/2013	G199
188	S200	14,6290800	0,3926500	30/06/2013	G200
189	S201	14,6290800	0,3926500	30/06/2013	G201
190	S202	14,6290800	0,3926500	30/06/2013	G177
191	S203	14,6290800	0,3926500	30/06/2013	G177
192	S204	14,6290800	0,3926500	30/06/2013	G79
193	S205	14,6290800	0,3926500	30/06/2013	G205
194	S206	14,6290800	0,3926500	30/06/2013	G206

195	S207	14,6195000	0,4046100	30/06/2013	G99
196	S208	14,6291300	0,4089300	04/07/2013	G208
197	S209	14,6087000	0,4088100	09/07/2013	G210
198	S210	14,6094200	0,4085000	09/07/2013	G210
199	S211	14,6091000	0,4132200	09/07/2013	G216
200	S212	14,6091000	0,4132200	09/07/2013	G216
201	S213	14,6091000	0,4132200	09/07/2013	G213
202	S214	14,6091000	0,4132200	09/07/2013	G214
203	S215	14,6091000	0,4132200	09/07/2013	G215
204	S216	14,6103100	0,4104500	09/07/2013	G216
205	S217	14,5733000	0,4012000	10/07/2013	G217
206	S218	14,6101300	0,3959800	10/07/2013	G218
207	S219	14,5796700	0,4098200	11/07/2013	G225
208	S220	14,5796700	0,4098200	11/07/2013	G220
209	S221	14,5796700	0,4098200	11/07/2013	G254
210	S222	14,5796700	0,4098200	11/07/2013	G222
211	S223	14,5796700	0,4098200	11/07/2013	G257
212	S224	14,5796700	0,4098200	11/07/2013	G258
213	S225	14,5796700	0,4098200	11/07/2013	G225
214	S226	14,5796700	0,4098200	11/07/2013	G226
215	S227	14,5796700	0,4098200	11/07/2013	G227
216	S228	14,5796700	0,4098200	11/07/2013	G255
217	S229	14,5796700	0,4098200	11/07/2013	G252
218	S230	14,5796700	0,4098200	11/07/2013	G230
219	S231	14,5796700	0,4098200	11/07/2013	G251
220	S232	14,5791600	0,4086900	11/07/2013	G251
221	S233	14,5794800	0,4088400	11/07/2013	G252
222	S234	14,5972500	0,4105700	12/07/2013	G62
223	S235	14,5972500	0,4105700	12/07/2013	G235
224	S236	14,5972500	0,4105700	12/07/2013	G236
225	S237	14,5972500	0,4105700	12/07/2013	G63
226	S238	14,5972500	0,4105700	12/07/2013	G238
227	S239	14,5972500	0,4105700	12/07/2013	G65
228	S240	14,5972500	0,4105700	12/07/2013	G165
229	S241	14,5972500	0,4105700	12/07/2013	G165
230	S242	14,5972500	0,4105700	12/07/2013	G122
231	S243	14,5972500	0,4105700	12/07/2013	G188
232	S245	14,6009800	0,3854600	13/07/2013	G245
233	S246	14,6070200	0,3854200	13/07/2013	G246
234	S247	14,6091900	0,3880500	13/07/2013	G247
235	S248	14,6091900	0,3880500	13/07/2013	G100
236	S249	14,6154500	0,4134900	13/07/2013	G249
237	S251	14,5807600	0,4141700	17/07/2013	G251
238	S252	14,5807600	0,4141700	17/07/2013	G252
239	S253	14,5807600	0,4141700	17/07/2013	G253
240	S254	14,5807600	0,4141700	17/07/2013	G254
241	S255	14,5807600	0,4141700	17/07/2013	G255
242	S256	14,5807600	0,4141700	17/07/2013	G256
243	S257	14,5807600	0,4141700	17/07/2013	G257
244	S258	14,5807600	0,4141700	17/07/2013	G258
245	S259	14,5807600	0,4141700	17/07/2013	G220

246	S260	14,5807600	0,4141700	17/07/2013	G222
247	S261	14,6229000	0,4102900	17/07/2013	G261
248	S262	14,6038900	0,4346600	22/07/2013	G262
249	S263	14,6038900	0,4346600	22/07/2013	G262
250	S264	14,6038900	0,4346600	22/07/2013	G264
251	S265	14,6038900	0,4346600	22/07/2013	G265
252	S266	14,6038900	0,4346600	22/07/2013	G266
253	S267	14,6038900	0,4346600	22/07/2013	G268
254	S268	14,6038900	0,4346600	22/07/2013	G268
255	S269	14,6038900	0,4346600	22/07/2013	G269
256	S270	14,6038900	0,4346600	22/07/2013	G270
257	S271	14,5970000	0,4287900	25/07/2013	G271
258	S272	14,5939400	0,4049400	03/08/2013	G272
259	S273	14,5939400	0,4049400	03/08/2013	G63
260	S274	14,5939400	0,4049400	03/08/2013	G274
261	S275	14,5939400	0,4049400	03/08/2013	G62
262	S276	14,5939400	0,4049400	03/08/2013	G168
263	S277	14,5939400	0,4049400	03/08/2013	G122
264	S278	14,5939400	0,4049400	03/08/2013	G122
265	S279	14,5939400	0,4049400	03/08/2013	G188
266	S281	14,5902300	0,3579100	18/08/2013	G281
267	S282	14,5979400	0,4047300	19/08/2013	G282
268	S283	14,6081400	0,4044800	20/08/2013	G193
269	S284	14,5956400	0,4053800	30/08/2013	G284
270	S285	14,5956400	0,4053800	30/08/2013	G285
271	S286	14,5956400	0,4053800	30/08/2013	G286
272	S287	14,5956400	0,4053800	30/08/2013	G287
273	S288	14,5956400	0,4053800	30/08/2013	G288
274	S289	14,5956400	0,4053800	30/08/2013	G289
275	S290	14,5956400	0,4053800	30/08/2013	G290
276	S291	14,5956400	0,4053800	30/08/2013	G291
277	S292	14,5956400	0,4053800	30/08/2013	G292
278	S293	14,5956400	0,4053800	30/08/2013	G293
279	S294	14,5956400	0,4053800	30/08/2013	G294

Dataset S2. Genotypic profiles of the 125 identified individuals in this study at 17 microsatellite loci. Missing alleles are indicated by a three-hyphen string. Hemizygotes were obtained by scoring at least twice an allele in two independent PCRs. ID: identifier; S: sex.

n	ID	S	D10S1432	D16S2624	D18S536	D1S533	D1S548	D1S550	D20S206	D2S1326	D2S1329	D2S1368	D4S243	D5S1470	D5S820	D6G374	D7S794	D7S817	vwf
1	G1	F	170174	-----	152168	-----	161169	-----	155167	230254	203203	189189	-----	177189	-----	145157	-----	116120	139139
2	G2	M	166174	146146	148152	219279	165169	193197	179183	254274	199199	181185	189189	189193	192196	161169	190198	132136	147159
3	G3	M	166174	142146	144152	219263	169169	185193	179183	254274	195199	185185	183189	185193	192192	161165	198---	132132	147159
4	G4	M	166182	142146	152156	219219	165169	189193	183183	254274	195199	181185	181189	189193	192196	165169	190198	136136	147147
5	G5	F	166178	146150	152152	267279	165177	181193	175183	258274	191199	181189	187193	185197	196200	165165	190190	128136	147155
6	G6	F	174174	146146	148152	263279	165169	185193	183183	254282	199203	181185	193197	189193	192192	161165	190198	132136	147159
7	G7	F	170178	138142	148148	195267	165177	185193	183183	274282	191203	181189	179183	193197	196204	157169	194198	128136	155159
8	G15	F	166174	142146	152152	203219	165169	-----	183183	262278	195199	181185	181189	193193	192196	145169	190198	132136	155159
9	G16	F	162174	142146	148148	187279	165169	-----	179183	254282	199199	185189	179189	189193	192196	165169	190198	132136	143147
10	G17	F	166166	142146	148148	219263	169169	-----	183183	254266	199199	177181	189197	189189	196196	165169	190198	132140	155159
11	G20	M	166174	142146	148148	219263	169169	189197	183183	266274	199199	177181	189197	189193	192196	145169	190198	136140	143147
12	G21	F	170174	142146	148152	195279	165177	185193	183183	274282	199203	185189	183189	189197	192196	157169	194198	128136	147155
13	G22	F	174182	142146	144148	175263	169169	185185	183187	254282	195203	181185	183197	185193	192192	165173	198198	128132	143159
14	G23	F	162166	142150	148148	203263	169169	185189	183187	266282	195199	177185	179197	189189	196196	145165	190198	132140	143155
15	G26	F	170178	138146	144152	175279	173173	185193	187187	270286	199199	177185	179185	185189	192196	161161	186190	132140	159163
16	G27	M	166170	146146	152152	175279	169173	193193	183187	254270	199199	177181	179189	185189	192196	161161	190198	132132	147159
17	G32	F	170170	142150	156156	203279	177177	181185	171179	214254	199199	185189	197197	193193	196208	145169	186194	132136	147151
18	G34	F	166174	138146	148148	187199	169173	181181	179183	258270	191199	181185	179193	185197	192200	165165	186198	132136	155163
19	G36	F	162162	138150	148148	175279	165169	181185	179183	266270	199199	177185	193193	185197	196200	165165	186194	136140	147151
20	G37	F	162174	142146	148148	187187	165169	189189	183183	254270	191199	181185	197201	185189	192212	169173	190190	136140	155159
21	G38	F	162170	146150	148156	215263	165173	181185	171183	266266	199199	177185	179193	185189	192200	169173	190194	128136	151155
22	G39	M	170170	138142	152152	199219	173173	193197	187191	250274	195199	177185	181197	181185	196204	157165	178194	128132	147159
23	G51	M	162174	134142	136148	263267	169169	185189	183191	266274	195195	181185	179201	193197	192196	145169	182194	128136	147155
24	G53	M	166170	150150	152152	187279	169173	181193	175187	274---	195199	185185	183201	185189	196196	161169	186194	128132	147159

25	G54	F	162166	138150	152152	263279	169169	181193	179187	274282	199199	185185	183201	185185	196196	165169	194194	136136	155159
26	G57	M	162162	142142	148152	187199	169173	181185	175183	254270	199199	177185	181189	193197	196196	161161	190194	128128	147155
27	G58	M	-----	142150	148152	187---	169---	185---	-----	274---	-----	185---	201---	189---	196196	-----	186190	128128	147147
28	G60	M	166186	138138	148148	199287	169173	181193	171183	270274	199---	185---	179189	189197	196200	161---	190198	128132	147163
29	G61	M	170170	142150	148148	187279	165169	181185	175179	266274	195199	185185	189193	193197	196196	161165	186194	128140	147147
30	G62	F	166174	146146	148152	219279	165165	193193	183183	262274	195199	177181	175201	185197	192192	145165	186186	136136	155159
31	G63	F	170174	138142	148148	219275	169173	189189	183183	278282	191199	185189	179201	189189	196200	161165	186190	136136	155163
32	G65	M	166186	142142	148152	267287	165169	193193	179183	254270	199199	177185	197201	185189	196200	161165	186198	132136	147155
33	G66	F	166186	142146	148148	187219	165165	193193	183183	262274	199199	181185	197201	181185	192196	165165	178186	136136	151159
34	G69	F	186186	142142	148152	263267	169169	193---	179---	270---	-----	177---	193---	193---	212---	-----	178198	132136	155155
35	G75	F	162174	146146	148148	267267	165169	181---	183---	266266	195---	-----	179201	193197	192---	169---	182186	128136	147155
36	G79	M	162170	146146	136148	203267	165169	193197	183191	254266	195199	181189	185189	189193	192196	169169	186198	136136	147159
37	G81	F	182182	142146	148156	175199	169169	181189	171183	274286	195199	181185	183193	185201	192204	157165	186190	124128	147155
38	G83	F	162166	146146	152152	203219	165165	193193	171183	270282	199199	-----	193193	185193	192208	169169	182190	128136	147151
39	G88	F	162166	146146	144148	175187	165169	181189	167183	270274	191199	177185	189201	181193	196200	157169	186190	136136	147147
40	G91	F	162178	146146	148152	175203	165169	185193	171175	270274	199199	177181	191197	193197	-----	-----	190194	128132	147151
41	G93	M	166182	142146	148156	187187	165169	181189	183183	270270	195199	177185	179179	181189	196---	-----	190198	136140	147155
42	G94	F	162174	138142	148148	215215	165165	185189	179183	270286	199203	181185	193197	189189	196200	161165	186190	128132	159159
43	G95	F	162166	142146	148148	187279	165169	181193	183183	274282	203203	181185	179189	189193	192196	165---	190198	132136	143159
44	G96	F	162182	146150	148152	187215	169177	189189	179179	262270	195203	177177	175181	185197	196200	157165	186190	132140	147147
45	G98	M	166182	146150	144156	175203	169173	185189	175183	274274	195---	181185	179189	189197	192196	-----	178198	128136	147151
46	G99	M	182182	142146	148156	187203	169169	185189	183183	270274	195195	181185	179181	189193	196200	145165	190198	136140	151155
47	G100	F	170170	146146	144148	211279	165169	193197	183183	266270	195195	181185	185201	181193	196200	165169	186186	132140	151159
48	G101	M	178182	142142	144148	215267	169181	185193	175183	254286	191191	185185	185189	185193	192192	145145	186198	124136	147159
49	G102	M	174178	142146	148148	219267	169169	185185	179183	258286	191195	177185	189193	185185	192192	145173	186198	124132	147159
50	G103	M	162182	142146	144144	267267	169181	185189	175183	254282	199---	185189	189189	185193	192196	145165	194198	136136	147159
51	G104	M	178182	146146	148148	175203	169169	193197	179183	270278	191195	181185	189---	189197	192196	161165	182194	124132	147159
52	G105	M	170174	146146	148148	175203	169169	193197	179183	270278	191195	185---	179189	189197	192196	161165	182194	124132	143155
53	G107	F	166182	146146	148148	219279	165169	185197	183187	254274	195199	181181	183189	189193	192192	161165	190198	132136	159---
54	G108	F	-----	138146	148152	-----	165173	185193	171187	270278	199199	177---	197---	197201	196196	169---	178190	136136	155---
55	G109	F	162174	138138	148152	199199	169173	185193	179183	270286	195199	185185	191201	185189	188200	165165	190190	136136	147159
56	G122	F	162174	142146	148148	263279	165177	193193	175183	270282	199199	181185	181201	185189	200212	157165	178182	132136	147155

57	G129	F	166170	146146	148148	187---	-----	193193	183---	254262	-----	185---	175197	189197	196---	165173	178186	128136	147155
58	G130	M	162170	142142	148148	-----	165173	193193	171183	270274	-----	185185	197201	185189	192200	-----	178182	128136	147147
59	G140	M	162174	142142	144152	215267	169177	189197	183183	270270	191195	181185	175201	189213	196208	145165	190190	136140	151155
60	G141	F	170182	142146	148152	187215	165169	181185	179183	270274	195199	181189	179189	193197	196196	161165	198198	132140	147151
61	G148	M	170170	142146	144148	263267	165169	181197	171183	270282	195195	181185	197201	193193	196200	165165	190194	132140	151151
62	G149	M	162162	138146	152152	179219	165173	193193	183187	266270	195199	181185	185193	181201	192200	145165	190198	136140	155155
63	G150	M	166178	146150	148148	175279	165169	181197	171183	254278	195199	185189	197201	185189	192196	165169	186190	132136	155159
64	G152	M	174182	142146	148152	187215	169169	185197	179183	254282	195203	181189	189197	189193	192192	165173	190198	128140	143159
65	G154	M	162166	150150	148148	175279	169173	181193	179183	266270	199199	177185	193193	189197	196204	161165	194194	128140	147159
66	G155	M	162166	146146	148152	179271	169177	193193	179183	270274	199199	177181	197201	181201	196204	161165	186194	132136	151163
67	G156	M	170178	142150	148148	215219	165165	185193	183187	262274	195199	181185	183197	189193	192196	165169	178194	136136	147159
68	G158	M	170182	142142	148152	187267	165165	189193	171183	258270	191199	185189	175179	181197	196196	165169	186186	124132	155159
69	G160	M	162182	138146	148148	215279	165165	185197	179183	254286	195199	185185	183197	189189	200200	165165	186190	128132	151159
70	G163	F	166182	142142	148152	263---	169169	185---	179---	250---	199199	-----	193201	185---	200212	161---	178198	128132	147155
71	G165	M	170186	142142	148148	187287	165173	193193	171183	254274	195199	185185	189197	181189	192196	165173	178186	128136	147151
72	G168	F	162174	146150	144152	215219	169173	181189	171183	270286	195199	185189	175193	193197	188192	153161	182194	136136	151155
73	G169	M	162170	142146	148152	219287	165169	189193	183183	270274	195199	185189	189---	181197	188196	161---	178194	132136	147151
74	G177	M	166182	142142	148156	199267	169169	189189	183183	266286	199199	181185	179183	185193	192196	165169	186186	128136	147155
75	G185	M	-----	142146	148---	219---	165169	181193	183---	270---	195199	185---	-----	181---	-----	161173	178194	132136	-----
76	G186	M	170186	138142	148148	187187	165169	189193	171183	274278	199199	-----	197201	189189	192196	165173	186190	128136	151155
77	G188	M	170174	142142	148148	215287	173177	189193	183183	254282	191195	173185	179197	181197	196200	169173	178190	132136	151151
78	G191	F	166166	142142	148152	267267	169169	185193	179183	250270	199199	177185	193201	185193	204---	161165	178198	132132	147---
79	G193	M	166---	150150	148148	175279	165169	181189	179183	266270	195199	177185	193193	189197	196196	145161	194194	128136	147147
80	G196	M	166182	146146	136148	175267	165169	189193	183187	266286	195195	185---	183183	193201	192196	165169	186186	124136	147155
81	G197	M	162166	142146	136148	199267	165169	189193	183191	266274	195199	181189	179185	193193	196196	169169	186194	136136	147147
82	G198	M	162166	146146	136152	199219	165169	189193	171187	270274	199199	177189	185193	185193	196196	169169	182194	128136	147151
83	G199	F	174174	134146	148148	263267	169169	181185	183187	258258	195199	181185	181201	185197	192196	145145	182190	128136	155155
84	G200	M	166174	134142	148148	263267	165169	181189	183191	274274	199199	181181	179201	185193	196196	145169	182186	128136	147155
85	G201	F	162166	146146	144152	203219	165---	193---	171183	270---	199199	177---	191193	185193	-----	161169	182190	128136	147151
86	G205	F	166170	142146	148148	203219	169169	181197	183183	254282	199203	181181	179189	189193	192200	165169	190198	136136	143159

87	G206	M	162166	146146	148152	199203	165165	193193	171183	266282	195199	177189	185191	193193	196208	161169	182186	136136	147147
88	G208	M	170170	138138	160168	187219	169---	165---	159171	230---	195195	193---	197---	181193	-----	157161	170170	124136	131139
89	G210	M	174174	138146	148148	219263	165165	189193	187187	270274	195199	177181	179181	185185	196196	145165	182190	132136	155159
90	G213	F	174178	142146	148152	195279	169177	185193	179183	274282	191199	185189	179189	193193	192196	157161	198198	128136	147155
91	G214	M	174174	146150	148148	203267	165177	185185	163179	270274	191199	181185	189191	185193	196196	145145	186190	136136	151159
92	G215	F	166174	142150	148148	175195	165173	181193	171187	274278	195199	185189	197201	181185	196204	157165	186194	136136	155159
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94	G217	M	174174	122122	148164	211223	165---	-----	163171	238---	199223	193193	199203	185197	-----	153157	186186	116116	119139
95	G220	M	174174	146146	148152	175267	165169	181189	175183	266266	191199	181185	189193	193197	188196	165165	190194	128132	159159
96	G222	F	174174	138146	148152	199271	177177	177189	179183	274274	191199	181189	193197	185193	188192	161165	182202	128136	147155
97	G225	M	162---	146146	148148	175267	169173	181193	175183	266266	199199	185185	189193	193---	196196	161161	190194	128132	151151
98	G245	M	178178	134142	148172	191219	165169	169169	159167	234238	199211	185---	199199	181193	-----	153161	178186	120124	143143
99	G246	M	170178	126142	160172	191215	165169	149169	167171	230238	203203	193---	197---	181193	-----	145153	174174	120148	123147
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102	G251	M	174174	138150	148148	175191	165173	181185	171187	258266	195199	181185	179193	189193	196196	157165	186194	124140	151159
103	G252	M	162170	146150	148152	175175	165165	181185	171179	270286	191199	181185	185193	181197	188188	161165	182194	128136	147159
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105	G254	M	162174	146150	148152	175215	165173	181181	171183	266270	195199	181185	193193	193197	188196	161165	194194	128136	151159
106	G255	M	162162	146150	148152	175203	165169	181193	171183	266266	195199	181185	193203	189197	188196	145161	194194	128140	159159
107	G257	F	170170	142146	144148	175215	165177	177185	179179	274286	191199	185185	185201	181189	188188	161---	182202	136136	147159
108	G258	F	174174	146150	148152	175199	173177	177181	179183	266274	195199	181185	193---	185193	188192	161165	182194	136136	151155
109	G261	F	166174	146150	144148	175199	169173	185189	175187	270270	195203	185185	189197	189197	192196	161169	178190	128136	147147
110	G262	M	166170	146150	144148	175175	169173	185193	175179	266270	195203	181185	179189	185197	192196	165169	190190	128136	147159
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116	G270	F	166182	138146	148148	183199	165169	189193	163187	254278	199---	177189	-----	185193	196196	145165	190194	136136	151159
117	G271	M	162178	146146	148156	175267	169177	181189	171183	278---	199199	185185	193197	189193	200204	165---	186194	128140	143155

118	G274	F	166182	142146	148148	-----	165173	193193	183183	254262	-----	-----	-----	197---	196196	-----	178---	132---	147155
119	G281	M	162166	142142	148148	187263	161169	181193	175183	-----	195---	181185	187197	185197	196204	145165	178190	132136	151163
120	G282	M	174182	146146	148156	195219	169173	185197	163187	274274	191195	177181	189197	185189	196196	161169	186190	128136	155155
121	G284	F	170170	138142	144152	195279	169173	193197	179183	270274	195---	181185	183197	189193	196200	1650	190198	132136	155159
122	G285	F	166170	146150	144148	219275	165169	189193	175183	286---	195199	177185	183189	193193	192200	165173	186194	132136	159163
123	G286	M	166174	142146	148148	219---	169169	181---	179---	-----	199---	185---	189---	185---	196---	-----	194198	128136	155---
124	G289	F	166---	138146	-----	187---	181---	197---	183---	266270	-----	-----	189201	193---	196204	165---	178194	132136	143155
125	G291	F	170178	146146	144---	203275	169177	-----	175183	286---	-----	-----	183201	193201	200---	-----	190194	136---	147159