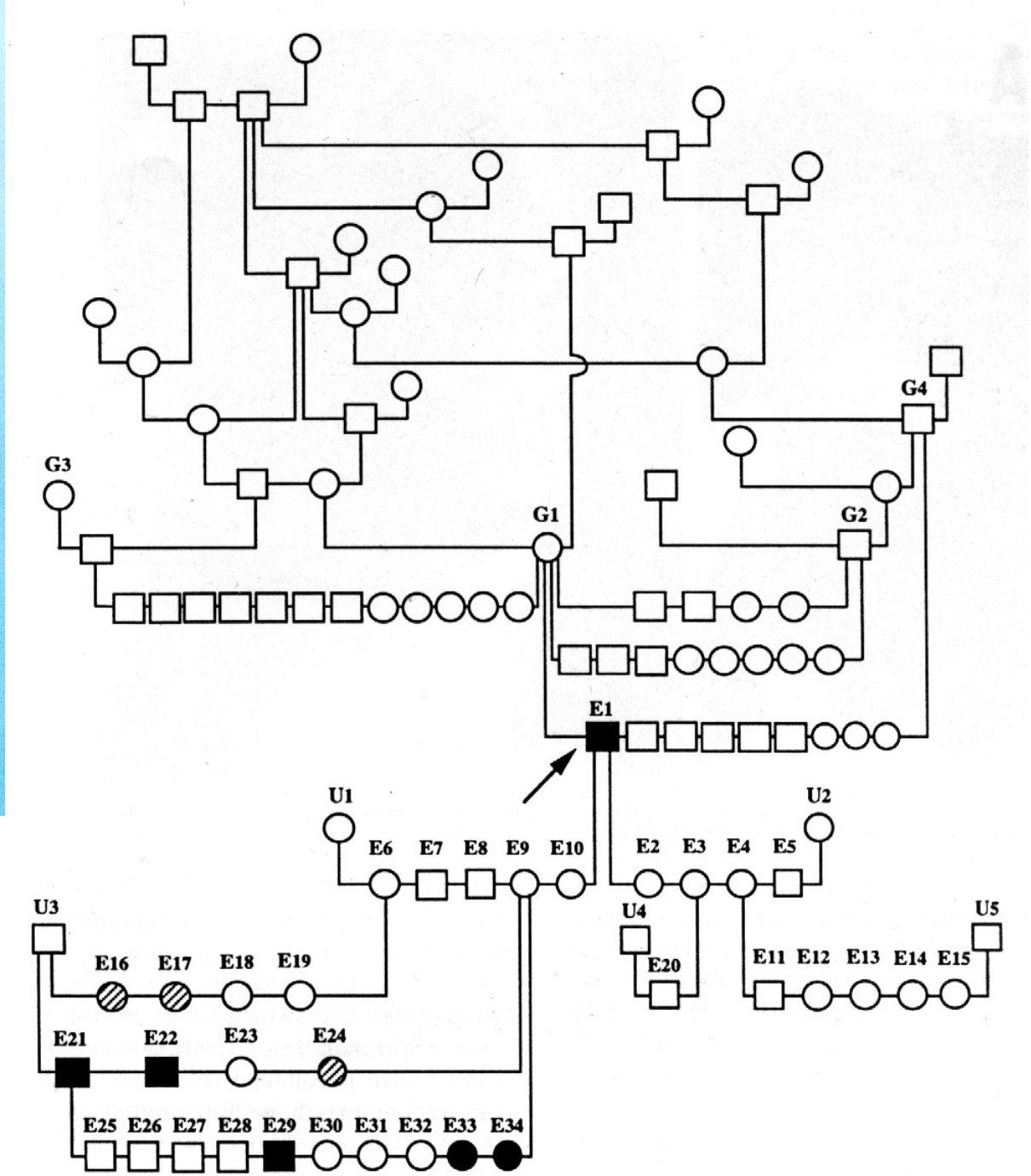
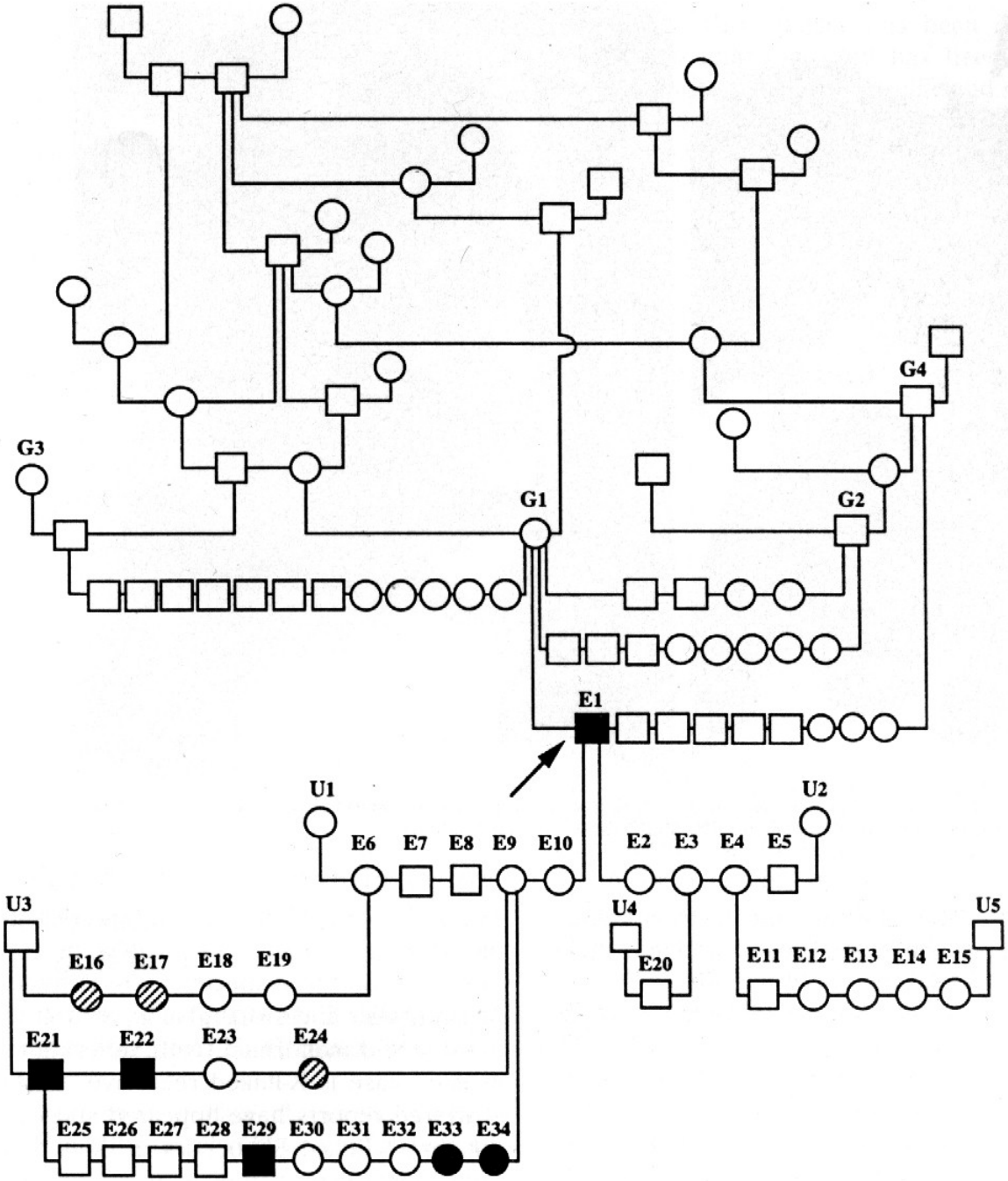
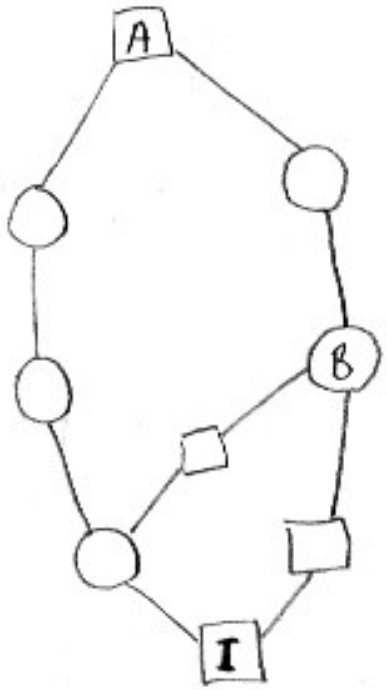

Koiraesimerkkejä



Axel, nelivuotias shäfer, hyvää sukua mutta kalju

Artikkeli


G3
G1
G2
G4
E1
U1
U2
E6 E7 E8 E9 E10
E2 E3 E4 E5
U3
U4
U5
E16 E17 E18 E19
E20
E11 E12 E13 E14 E15
E21 E22 E23 E24
E25 E26 E27 E28 E29 E30 E31 E32 E33 E34



$$F_I = \left(\frac{1}{2}\right)^7 \cdot (1+F_A) + \left(\frac{1}{2}\right)^4 \cdot (1+F_B)$$

$$\left(\frac{1}{2}\right)^7 + \left(\frac{1}{2}\right)^4 = 0.07$$

Pedigreet ja niiden tulkinta

Sukusiitoskertoimen (**F**) laskeminen

F ilmaisee, millä todennäköisyydellä esivanhemmassa ollut alleeli tulee **homotsygoottisena** jälkeläiseen

Haetaan kaaviosta kaikki yhteiset esivanhemmat, kaikkia polkuja pitkin

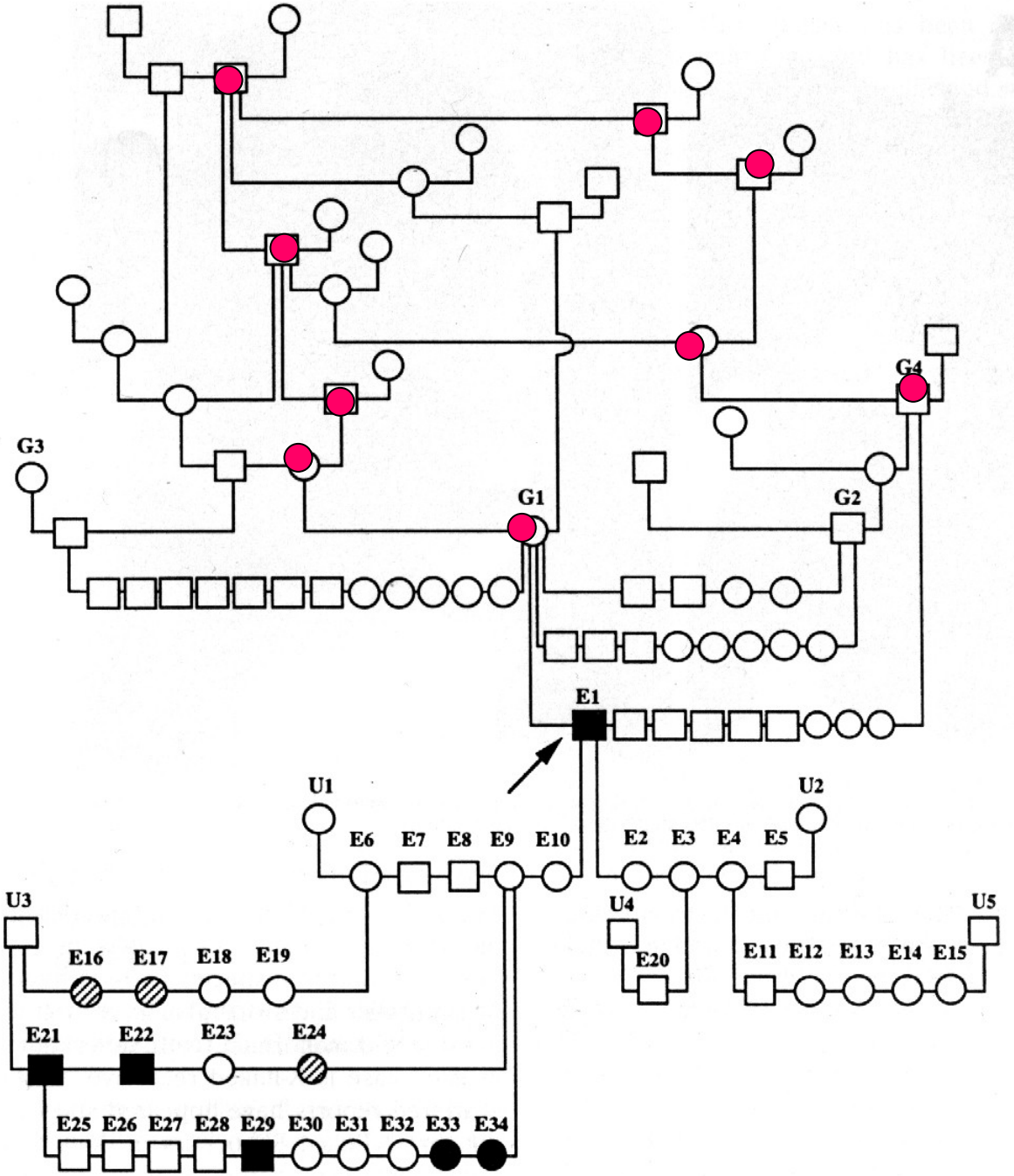
Joka polvessa laimennos ½

Axelin sukusiitos-kertoimen laskeminen

Tässä ensimmäinen **polku**

Yhdeksän askelta

$(1/2)^9 = 0.00195$

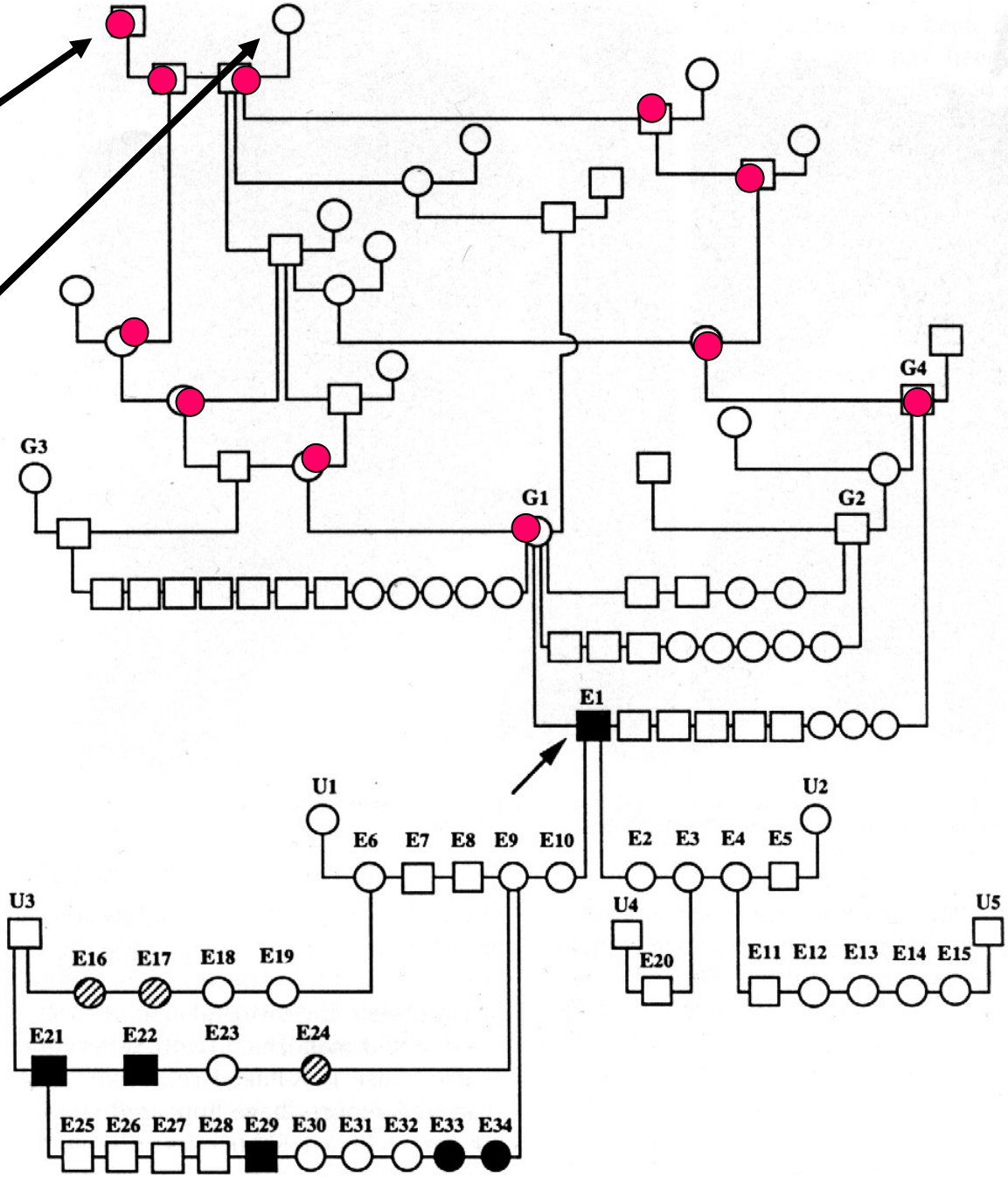


toinen polku

n = 11

kolmas polku

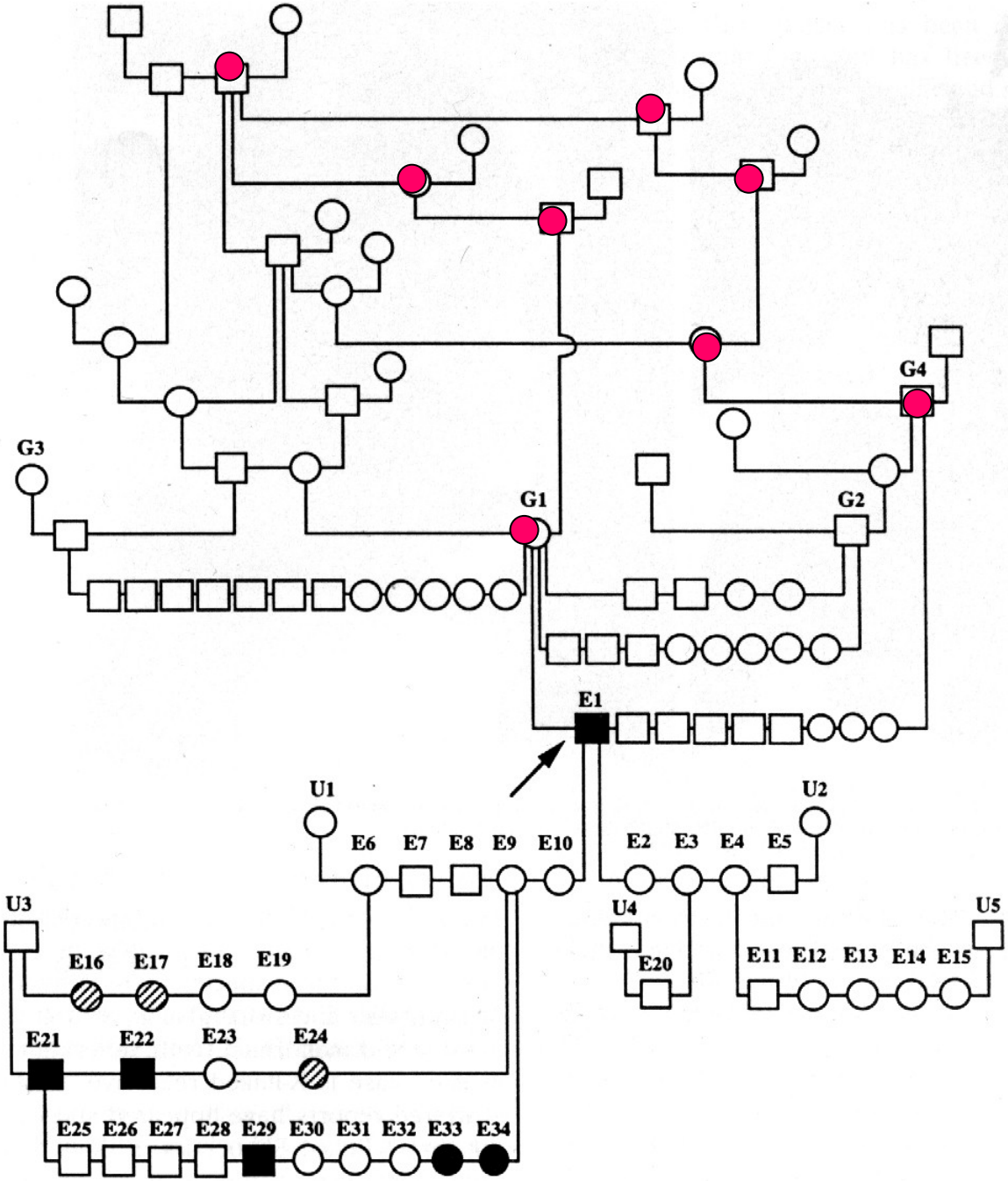
$(1/2)^{11} = 0.00049$



neljäs

n = 8

$(1/2)^8 = 0.0039$



viides polku

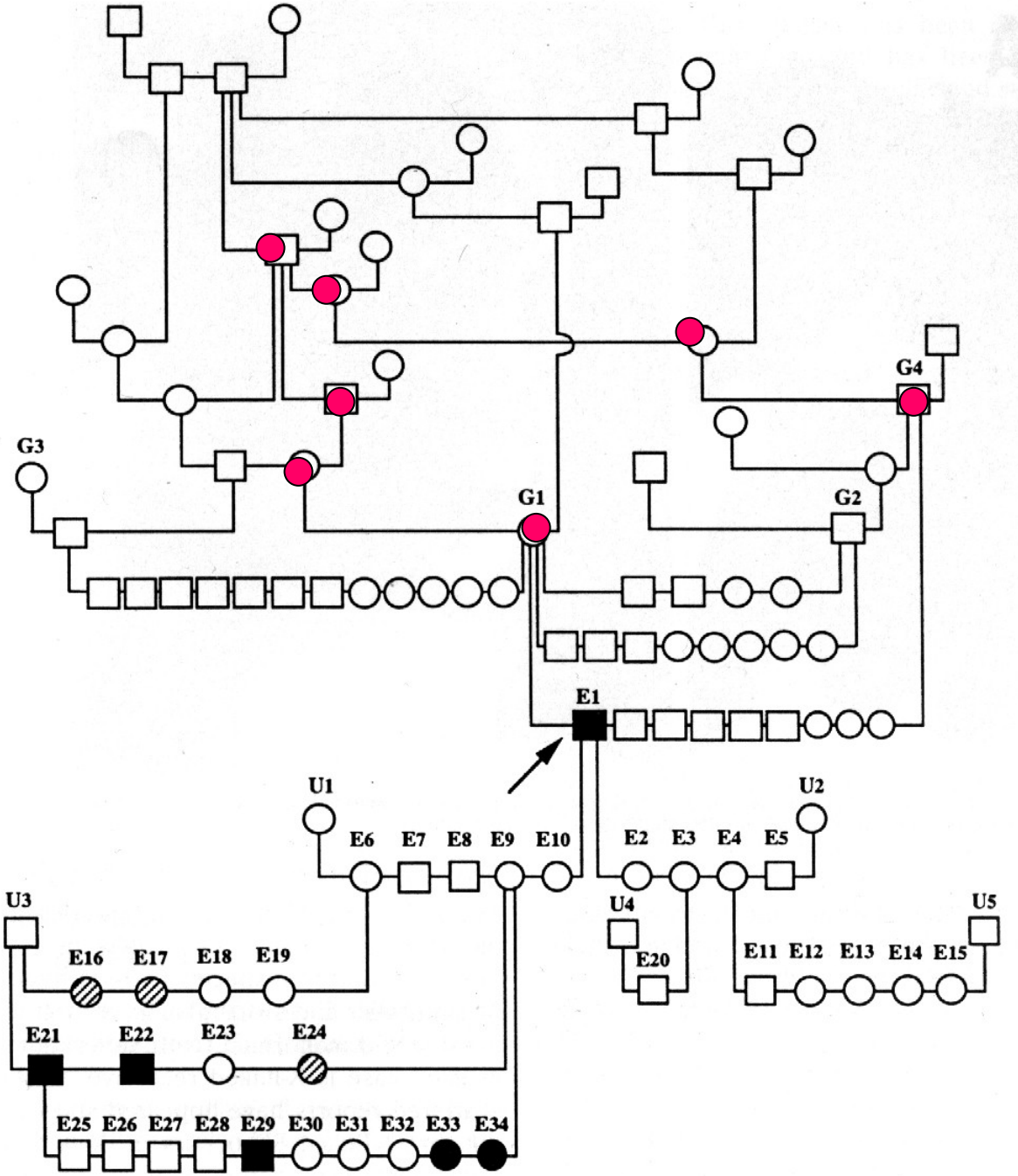
n = 7

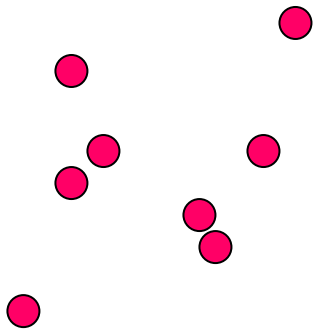
$(1/2)^7 = 0.0078$

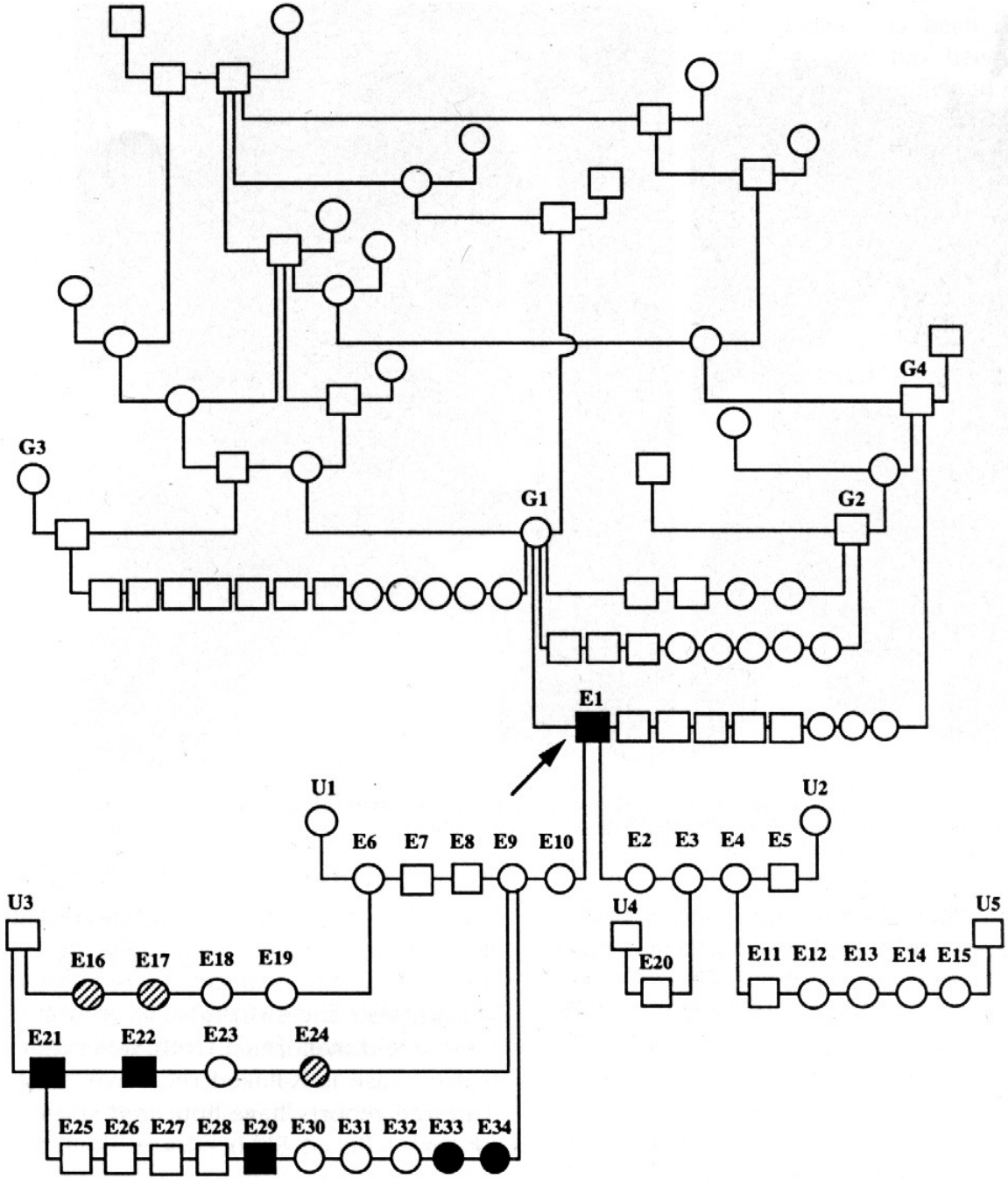
yhteensä noin

0.0146

eli 1.5 %



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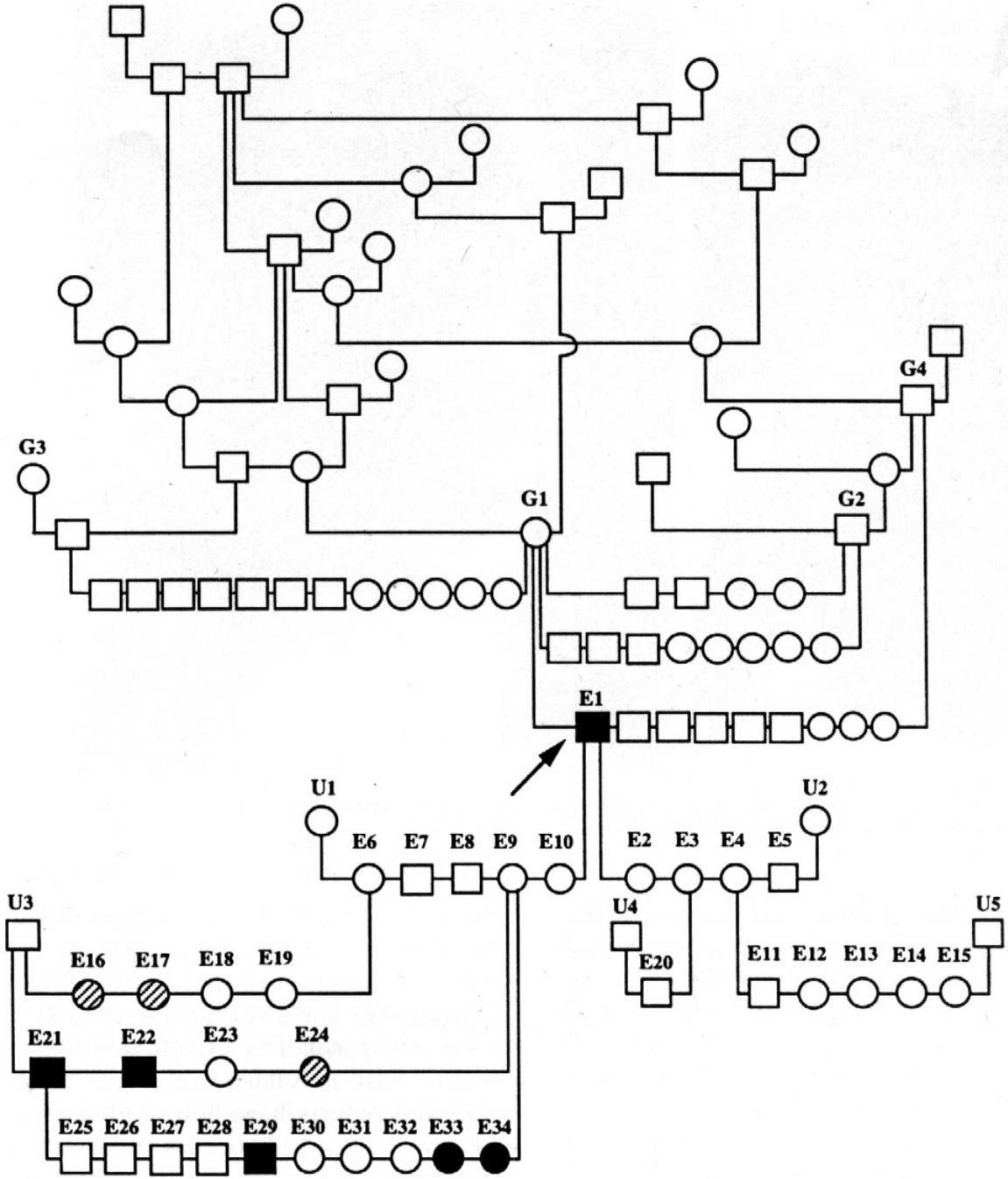
Vaikka polkuja näyttää olevan paljon, ei sukusiitoskerroin kuitenkaan ole kovin suuri

Johtopäätöksiä ei silti tehdä hätiköiden!

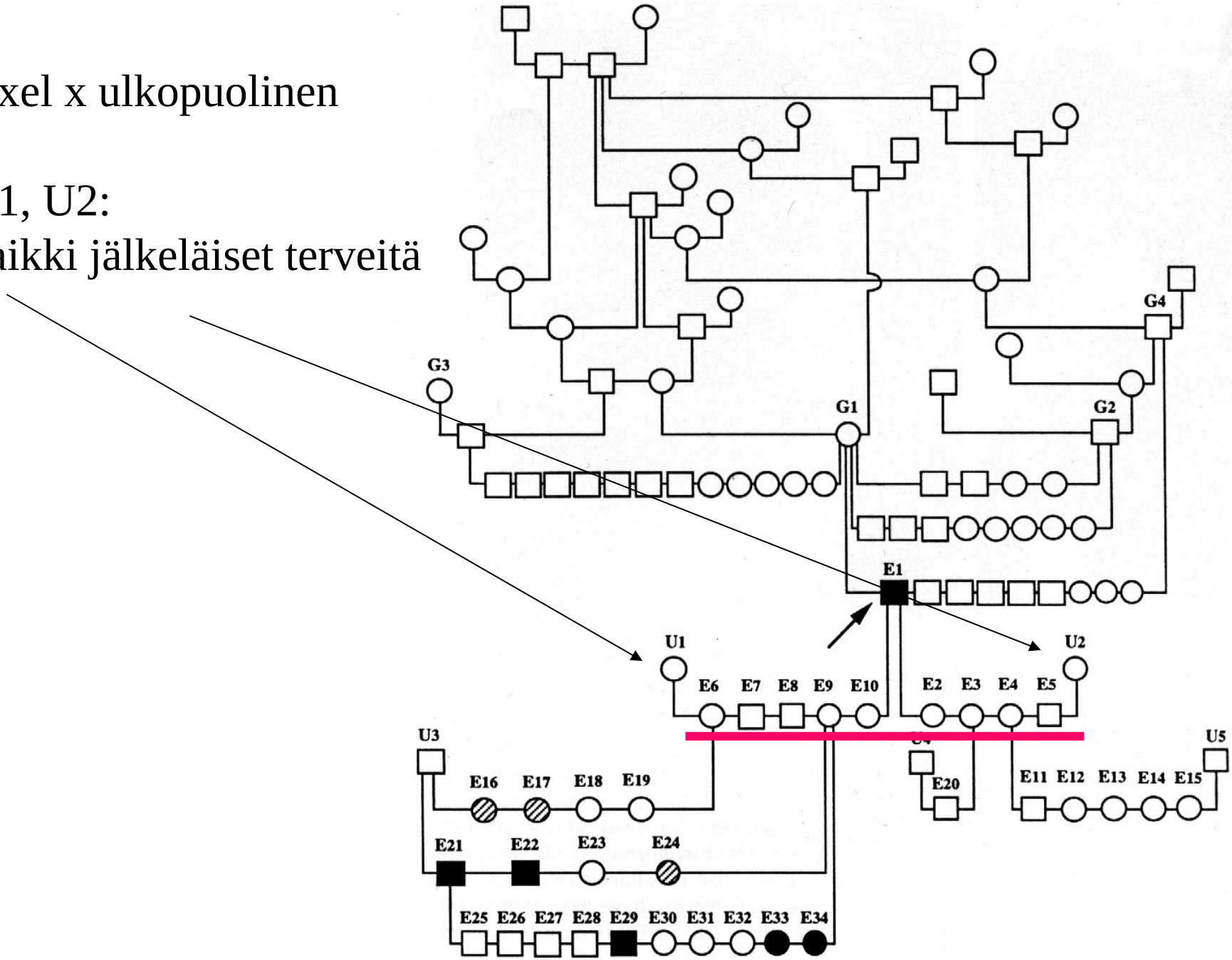
Tarkastellaan Axelin jälkeläisiä

U keeshondei yms



Axel x ulkopuolinen

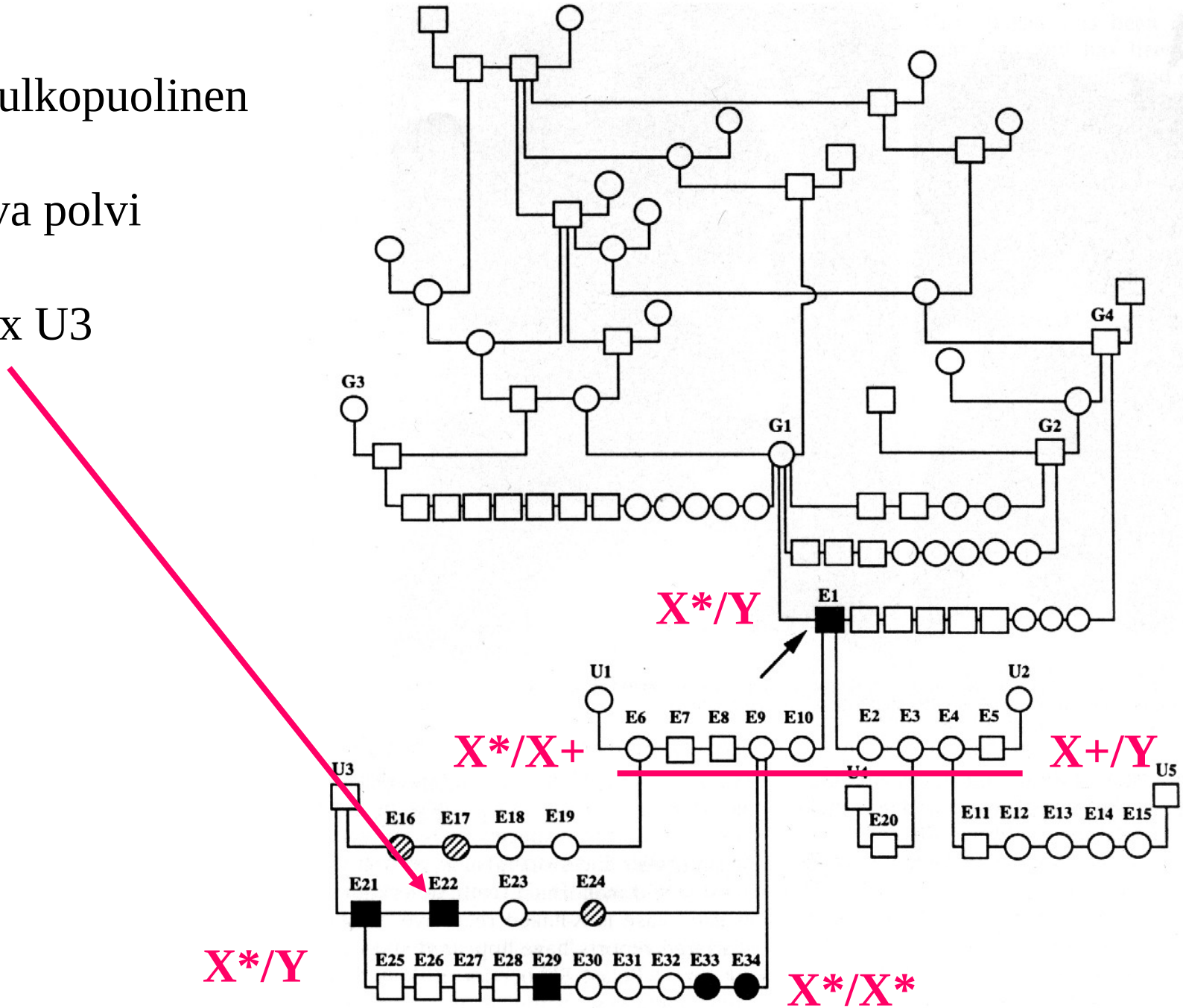
U1, U2:
kaikki jälkeläiset terveitä



Axel x ulkopuolinen

Seuraava polvi

E6, E9 x U3



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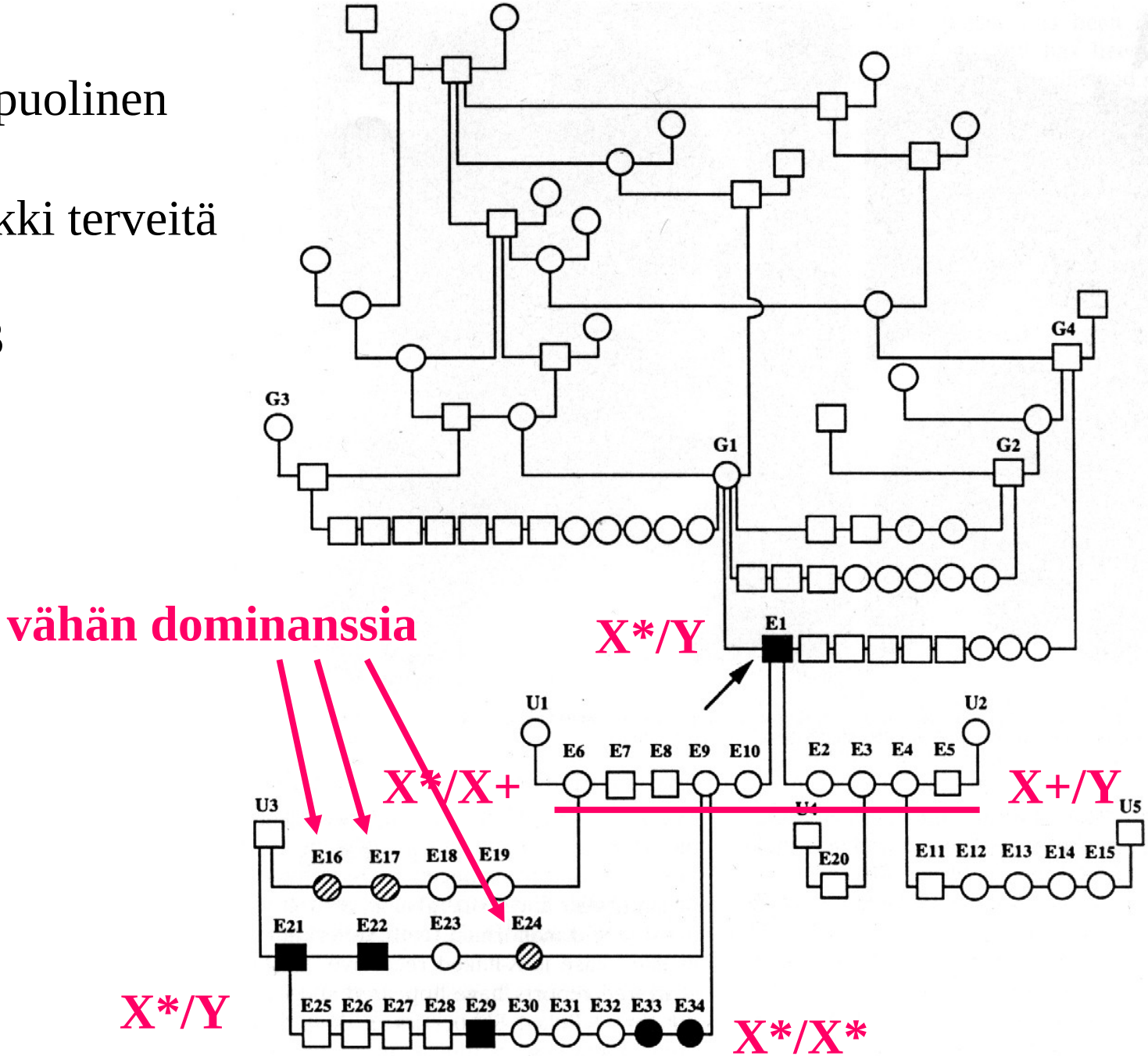
U1, U2: kaikki terveitä

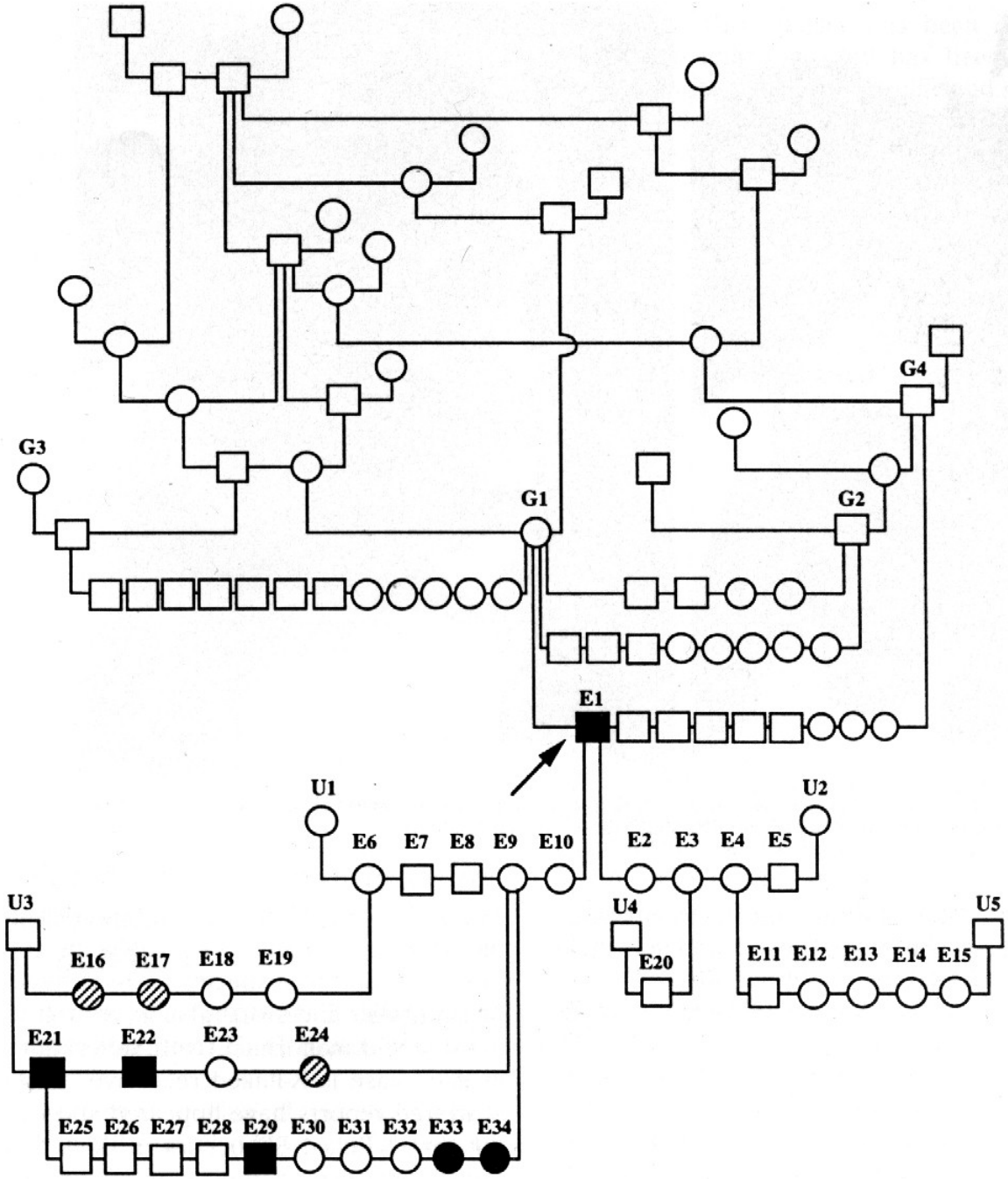
E6, E9 x U3



Johtopäätös:

X-kromosomaalinen, melkein resessiivinen

Jos Axel olisi saanut X* -kromosomin äidiltään, olisi ihme, ettei sen 17 veljellä ollut ominaisuutta



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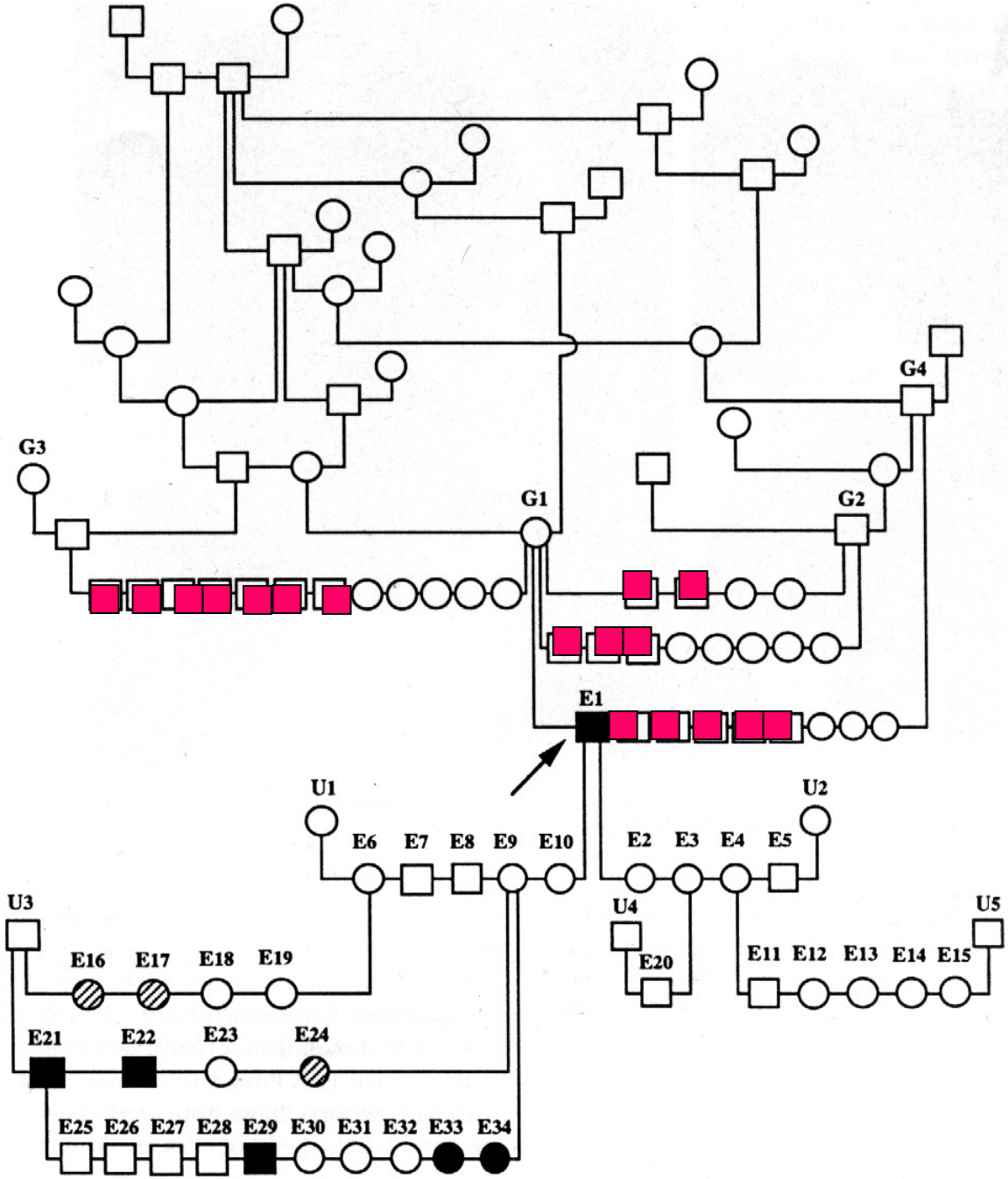


Synnynnäinen lihaskouristelu kääpiösnautserilla

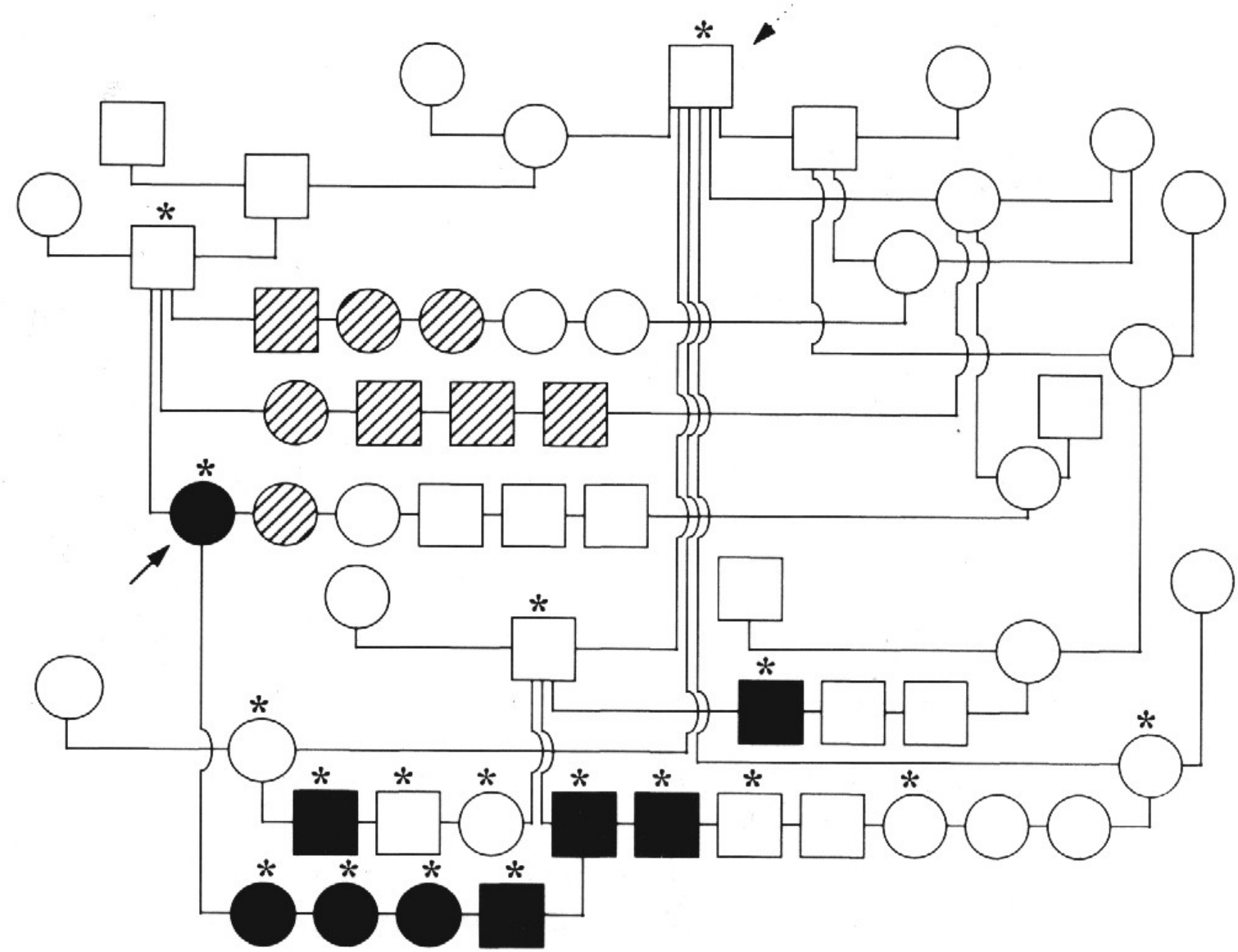
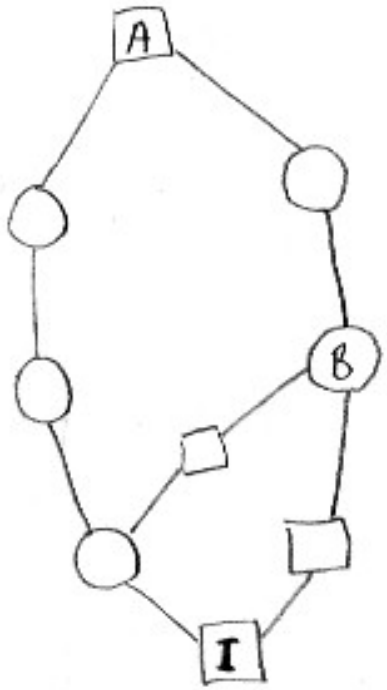


Figure 1. Pedigree information on a family of miniature schnauzers with myotonia. The litter at the bottom of the chart was a test mating between two affected dogs. Open circles and squares denote male and female clinically unaffected dogs; solid circles and squares denote clinically affected dogs, examined; striped circles and squares denote male and female clinically affected dogs, reported; asterisks denote examined animals; solid arrows denote proposita; and dotted arrows denote common ancestors.



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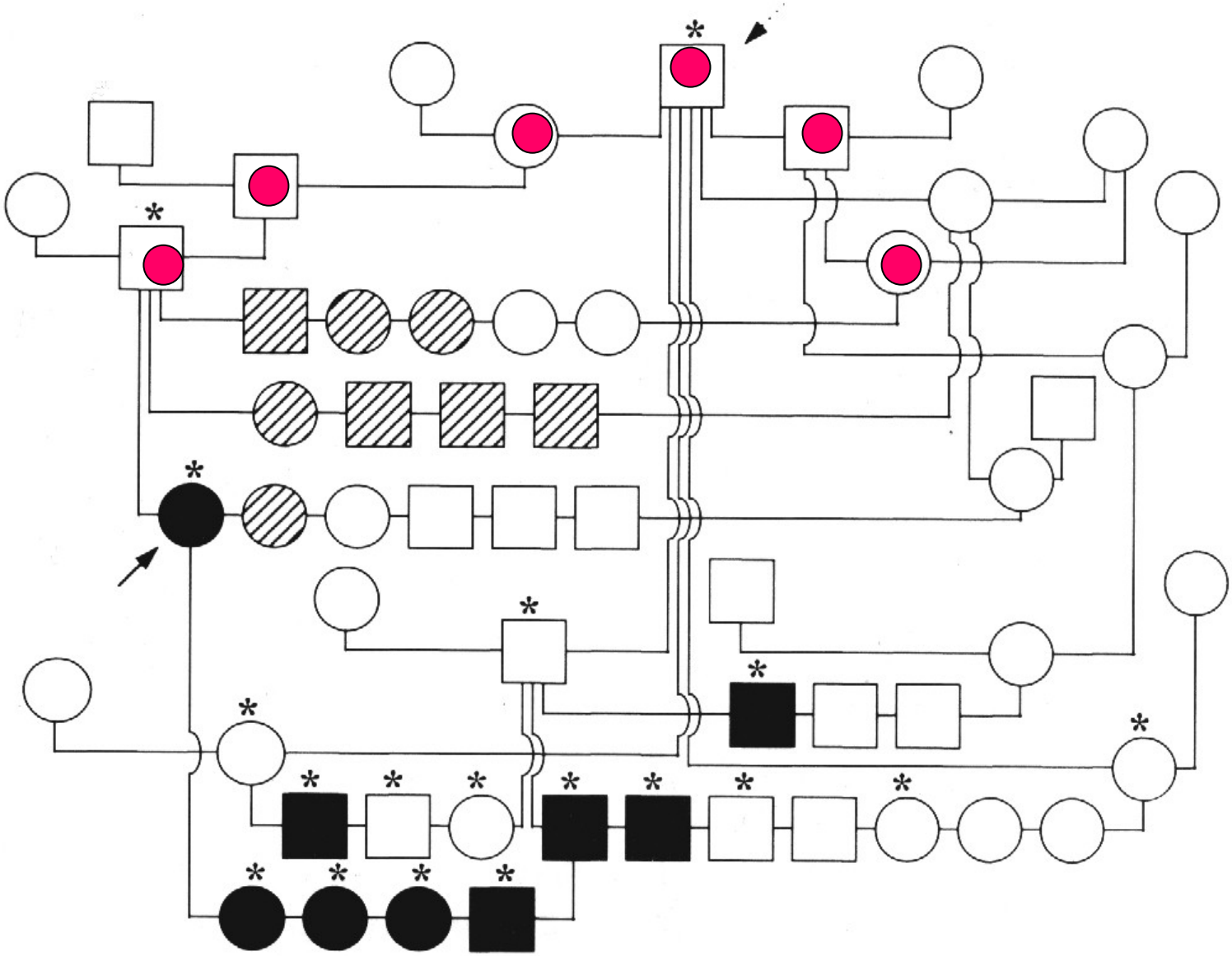

n = 6

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n = 5

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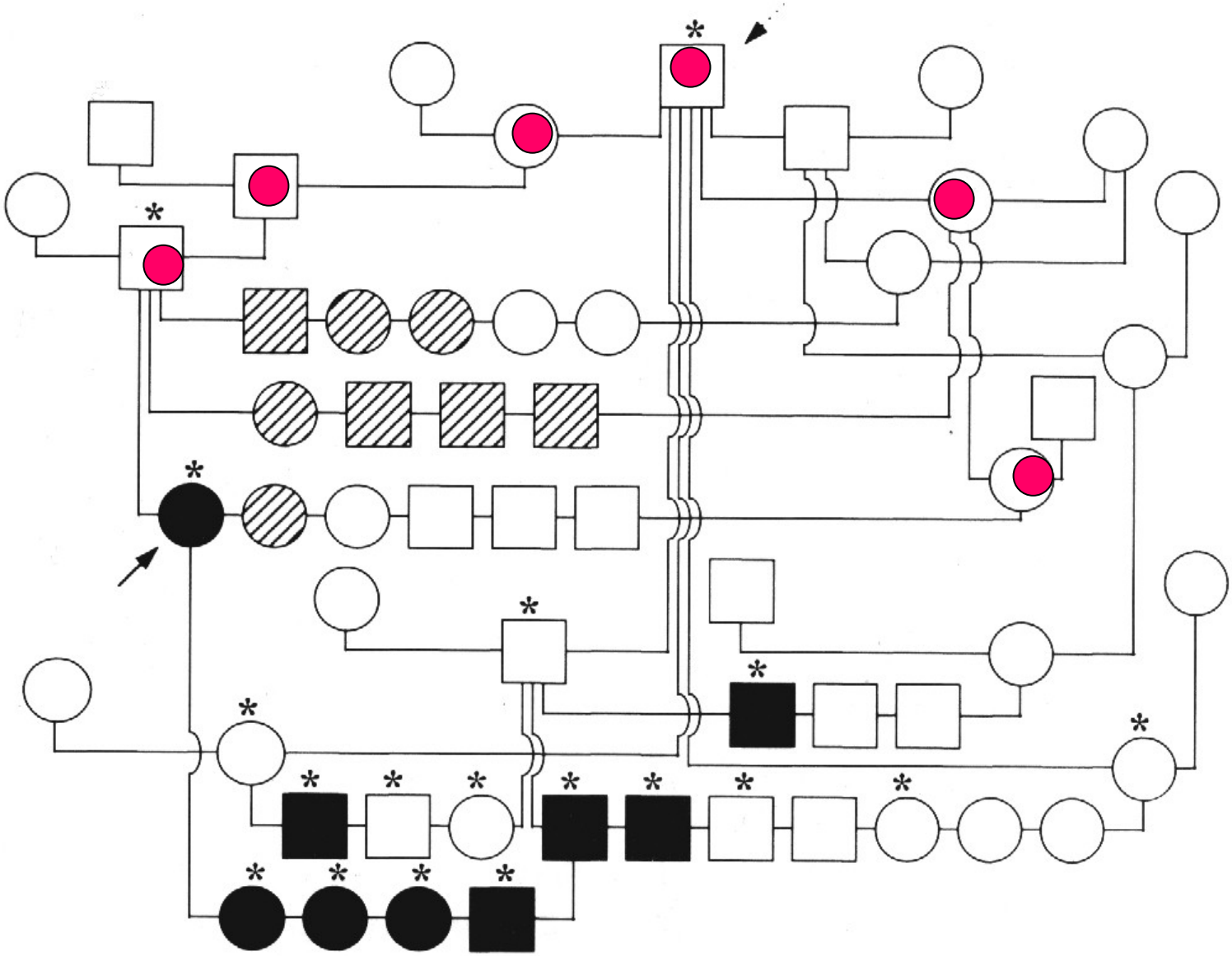

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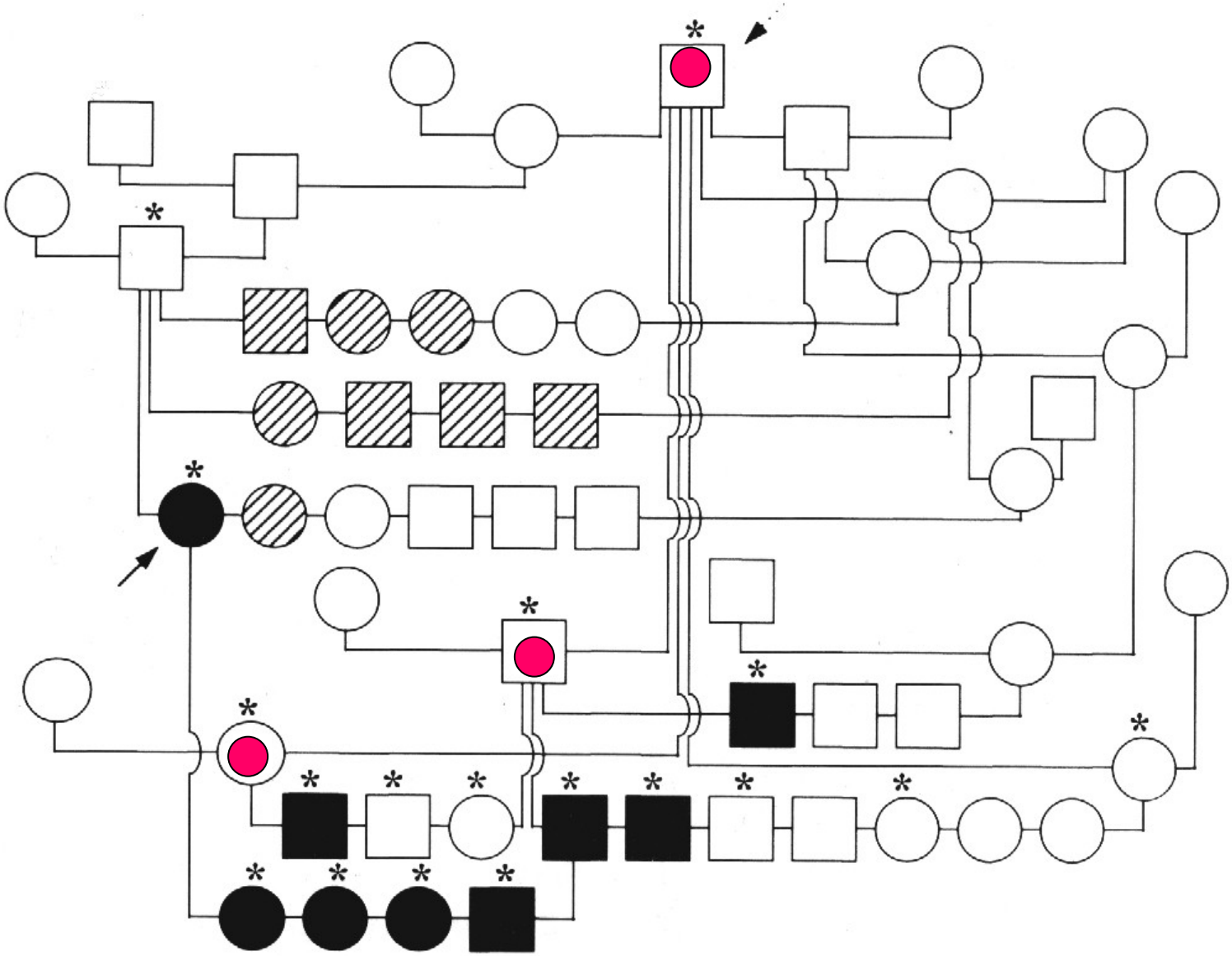

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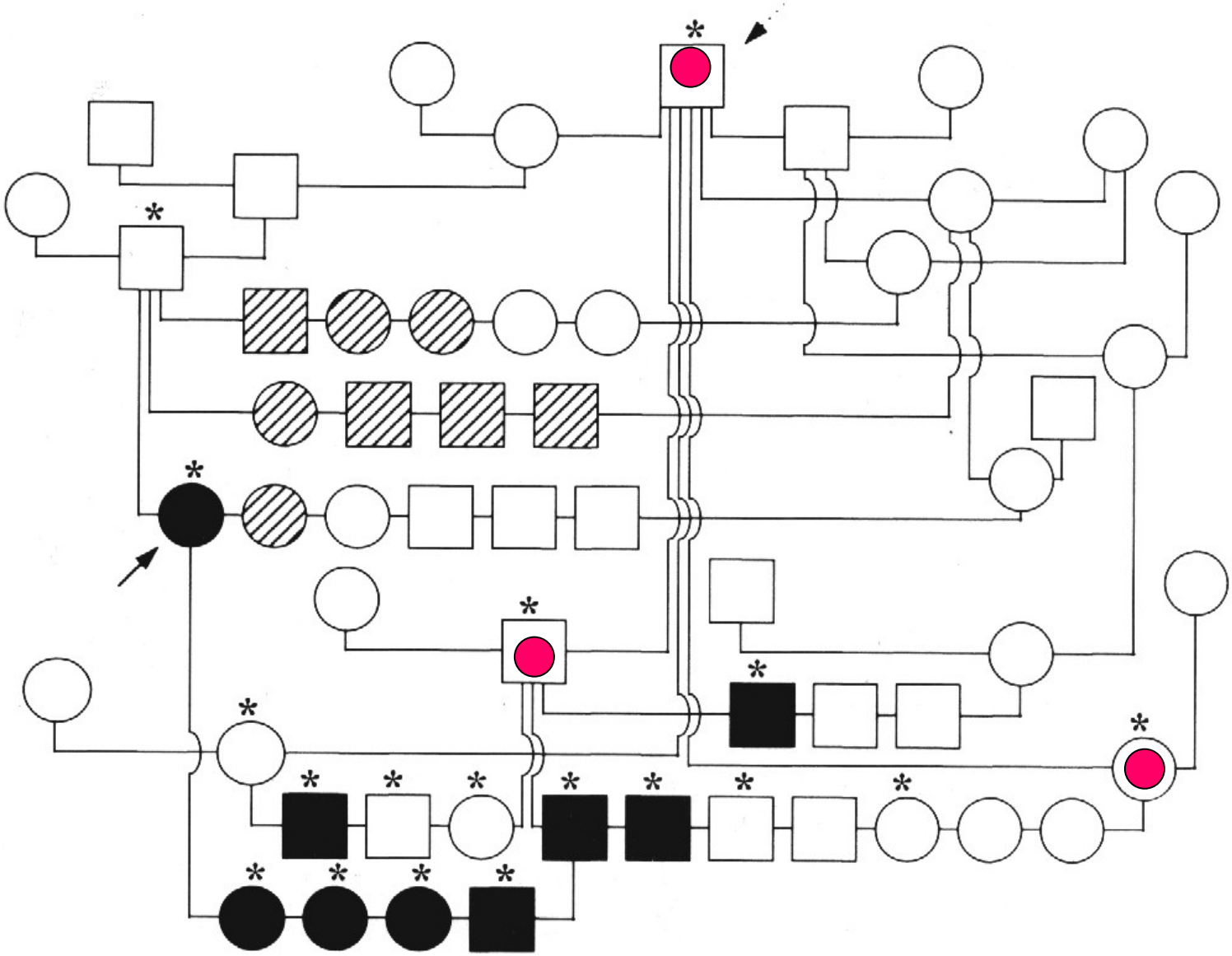

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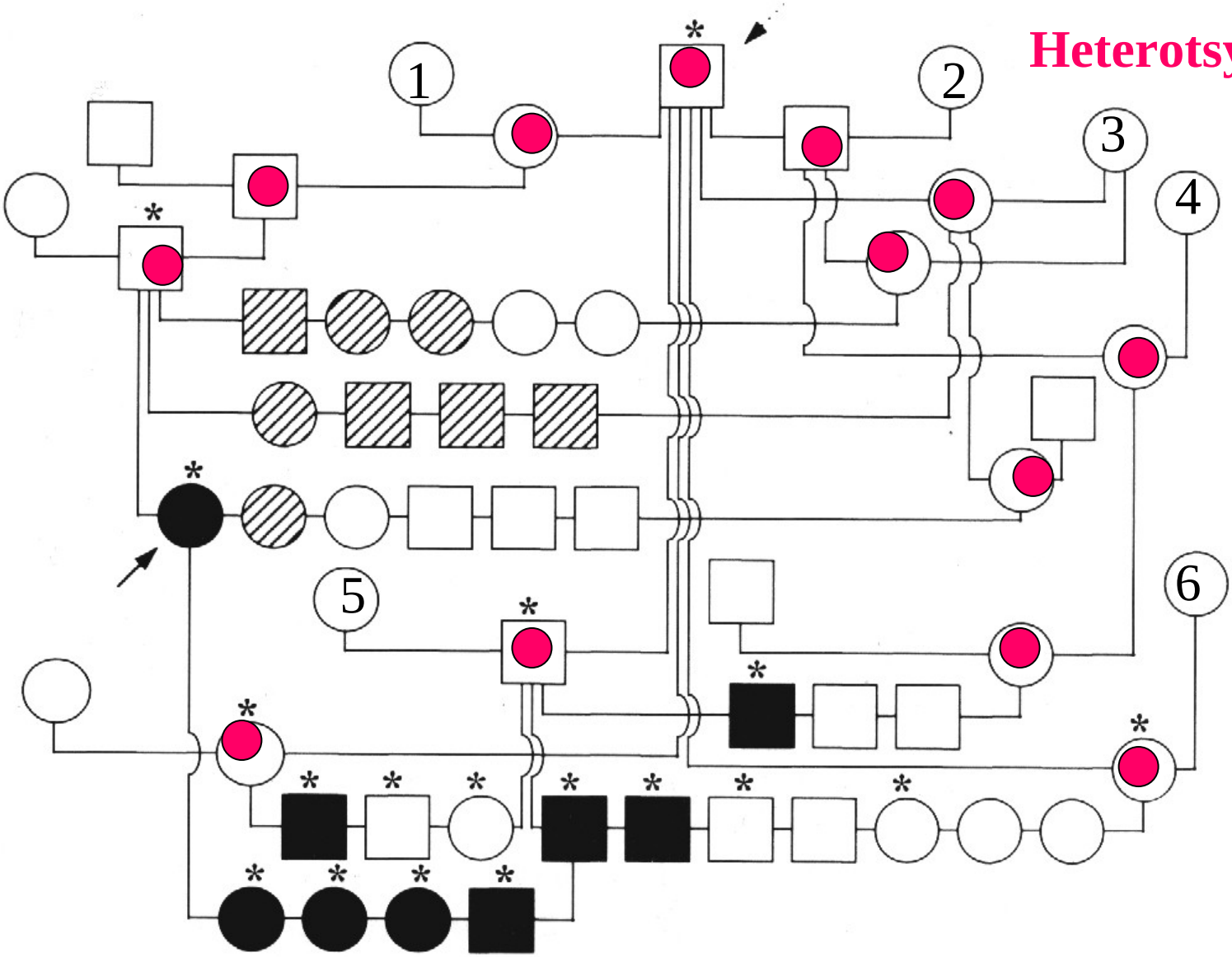
Heterotsygootteja



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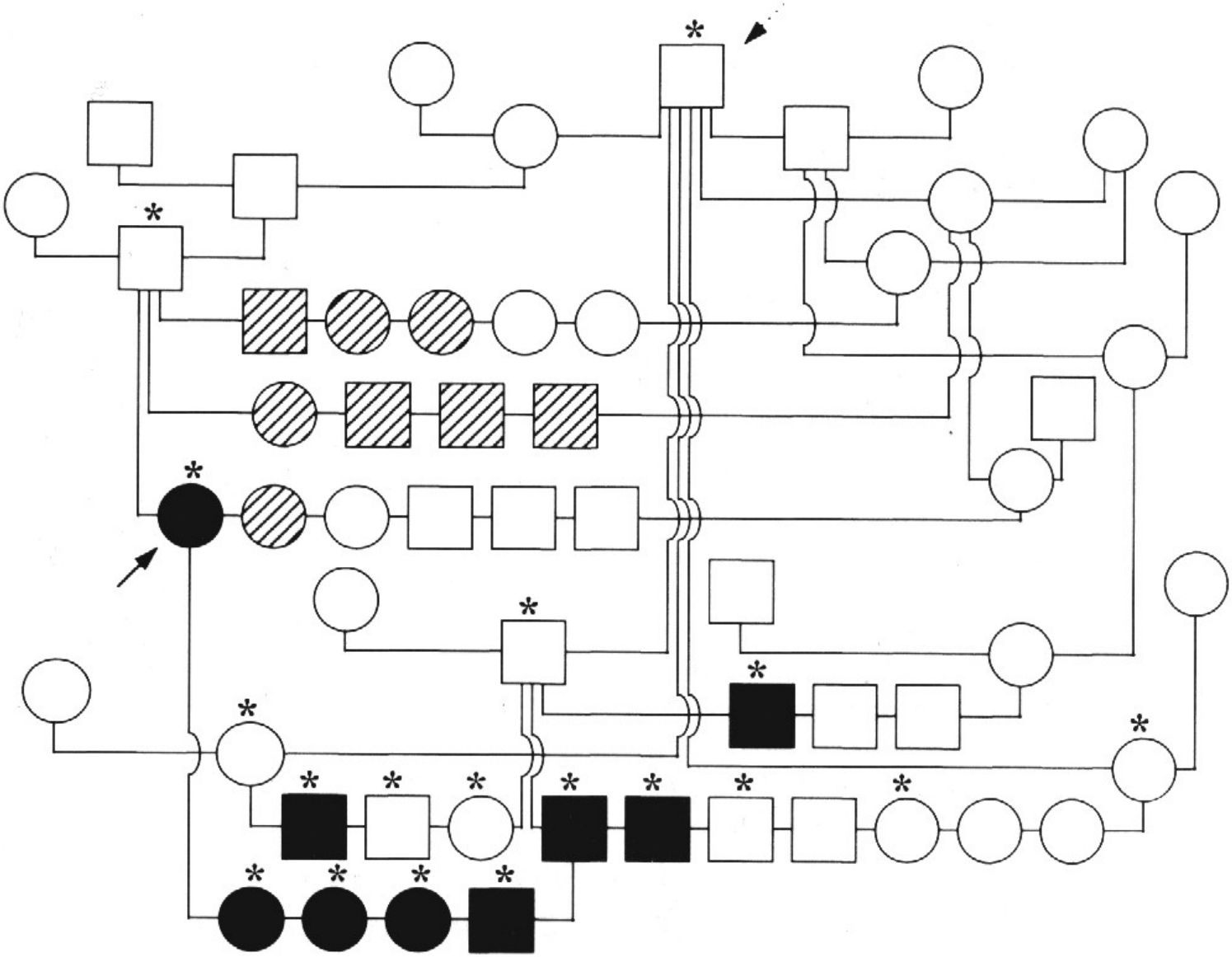

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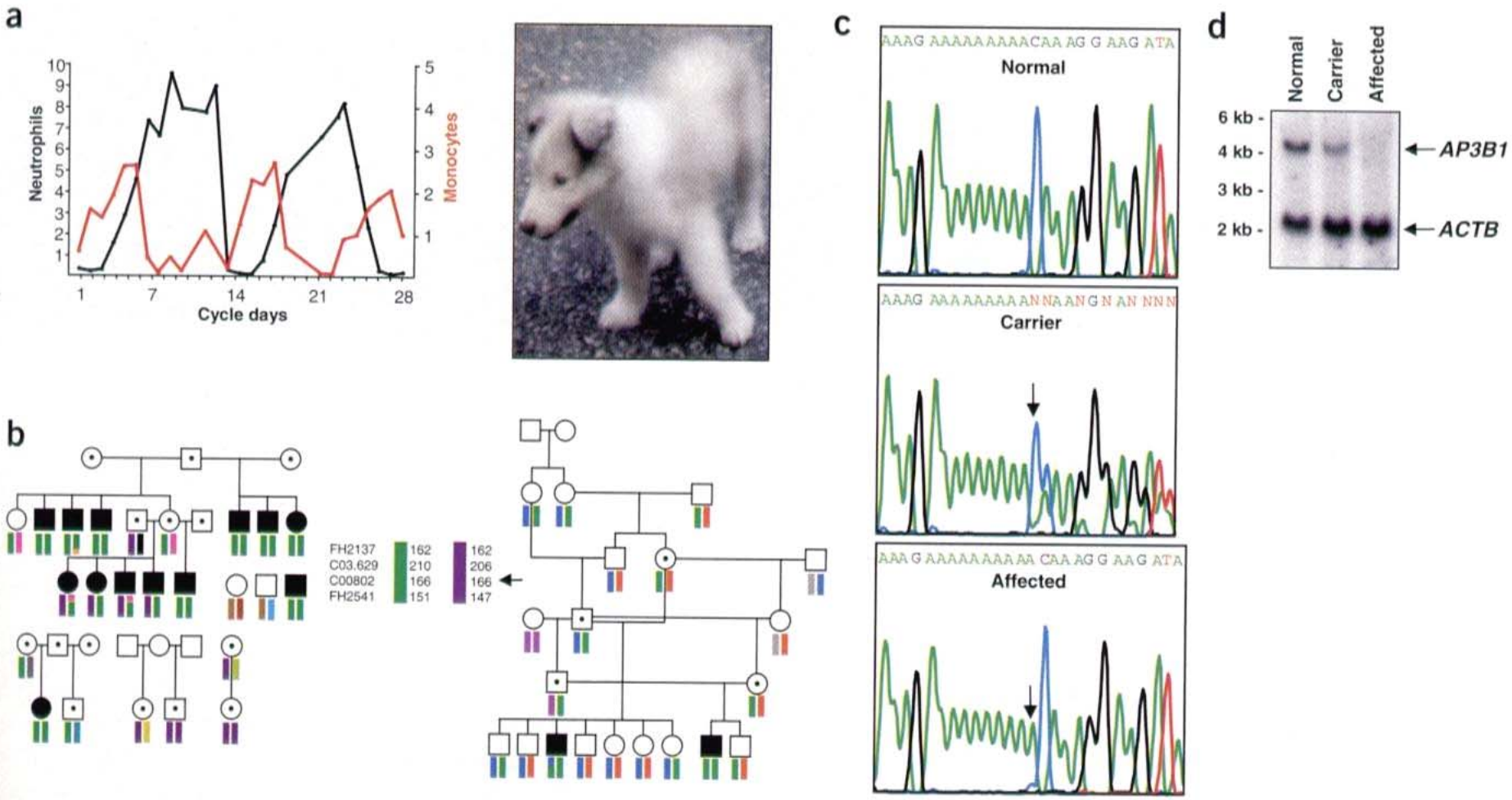

Figure 1 Mutation of *AP3B1* causes canine cyclic hematopoiesis. (**a**) Phenotype of canine cyclic hematopoiesis[5], showing 2-week reciprocal cycles of neutrophil and monocyte production (number of cells $\times 10^{-3}$ per μl) and gray coat. (**b**) Canine cyclic hematopoiesis pedigrees. Dots indicate carriers (identified by affected offspring). Each color represents a unique haplotype. Arrow shows region of linkage disequilibrium. Numbers refer to sizes (in nucleotides) of alleles for each marker. (**c**) Genomic DNA electropherogram. Arrows indicate A-insertion mutation. (**d**) Northern blot of total RNA from blood, showing reduced *AP3B1* transcript compared to *ACTB* control.

Nature Genetics Sept 2003


Tätä sisarusparvea ei sukusiitos vaivaa! Onnellisia luomukoiria
Pjaozeron (Pääjärvi) kaupungista