



Fig. 75.1 Distribution of the cultivated coffees, *Coffea arabica* and *C. canephora*.

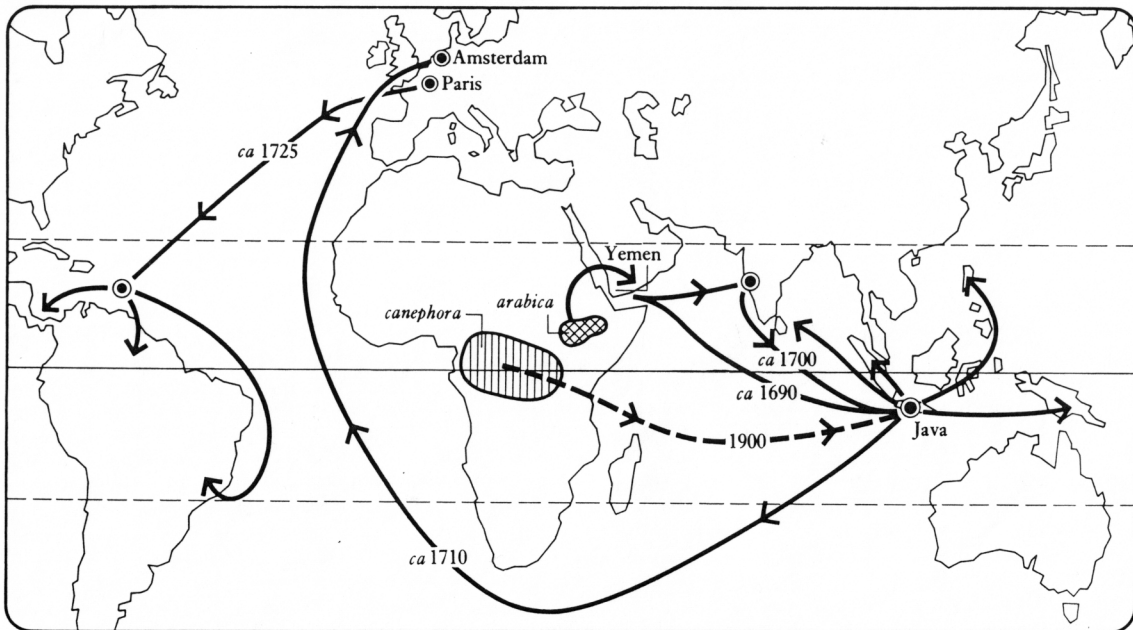


Fig. 75.2 Relationships of the cultivated coffees, *Coffea*.

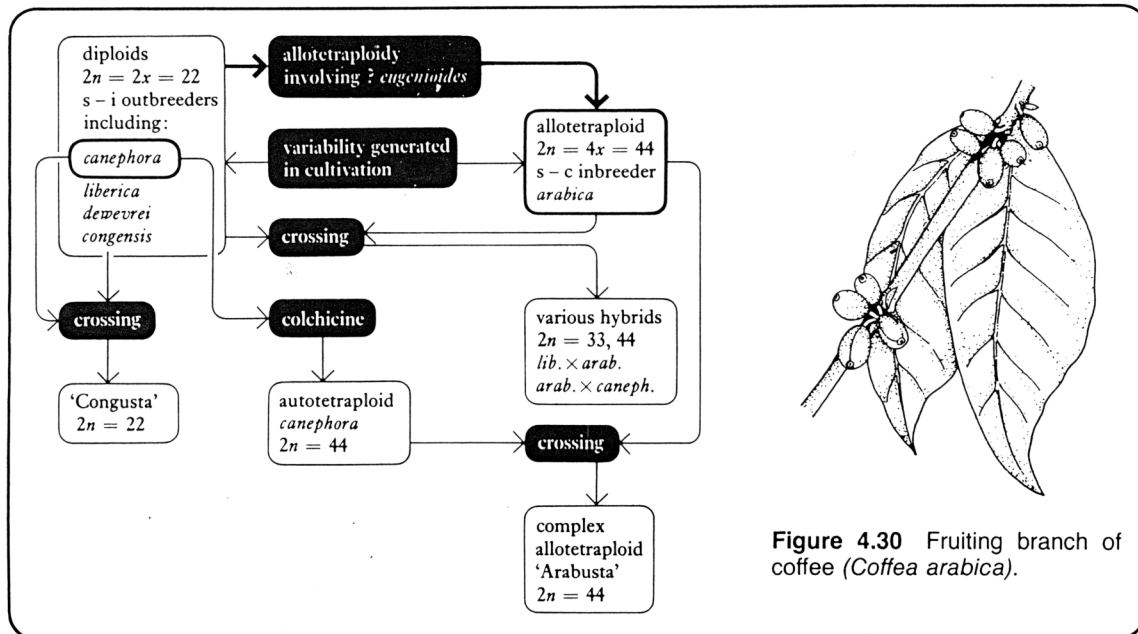
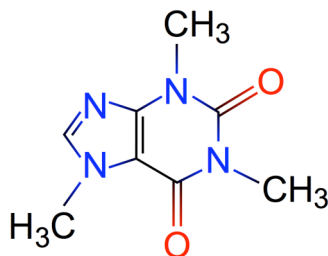
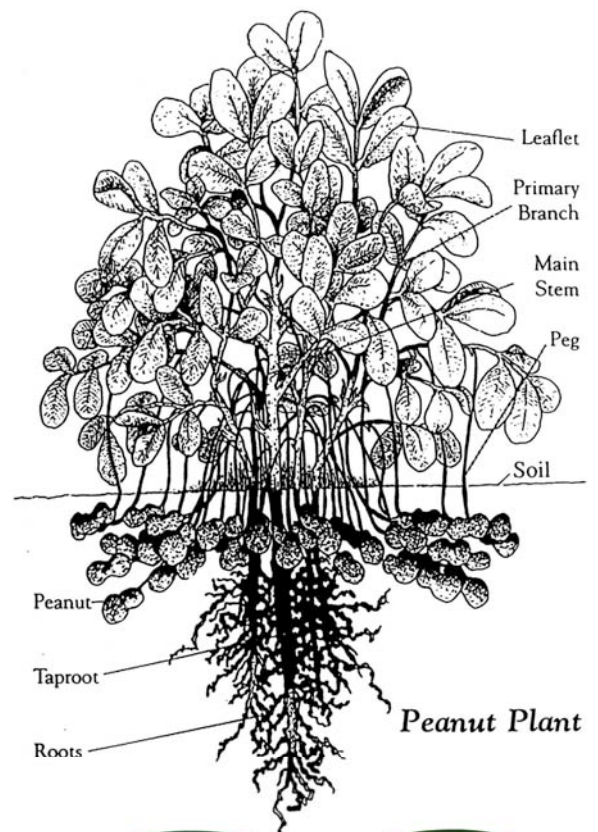


Figure 4.30 Fruiting branch of coffee (*Coffea arabica*).

Source: Ferwerda FP (1976) Coffees. *Coffea* spp. (Rubiaceae) In Simmonds NW (ed.) Evolution of Crop Plants. Longman. pp. 257–260.



Caffeine structure



Food of the Gods?

Plant Biology
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Fig. 1. The *Arachis hypogaea* L. (peanut or groundnut) plant. Cultivated peanut (*Arachis hypogaea*) originated in South America. The center of origin is Bolivia, Brazil and Argentina. The *Arachis* genus is large, with an estimated 70 species. The cultivated species is an allotetraploid ($2n=40$), most wild species are diploid ($2n=20$)

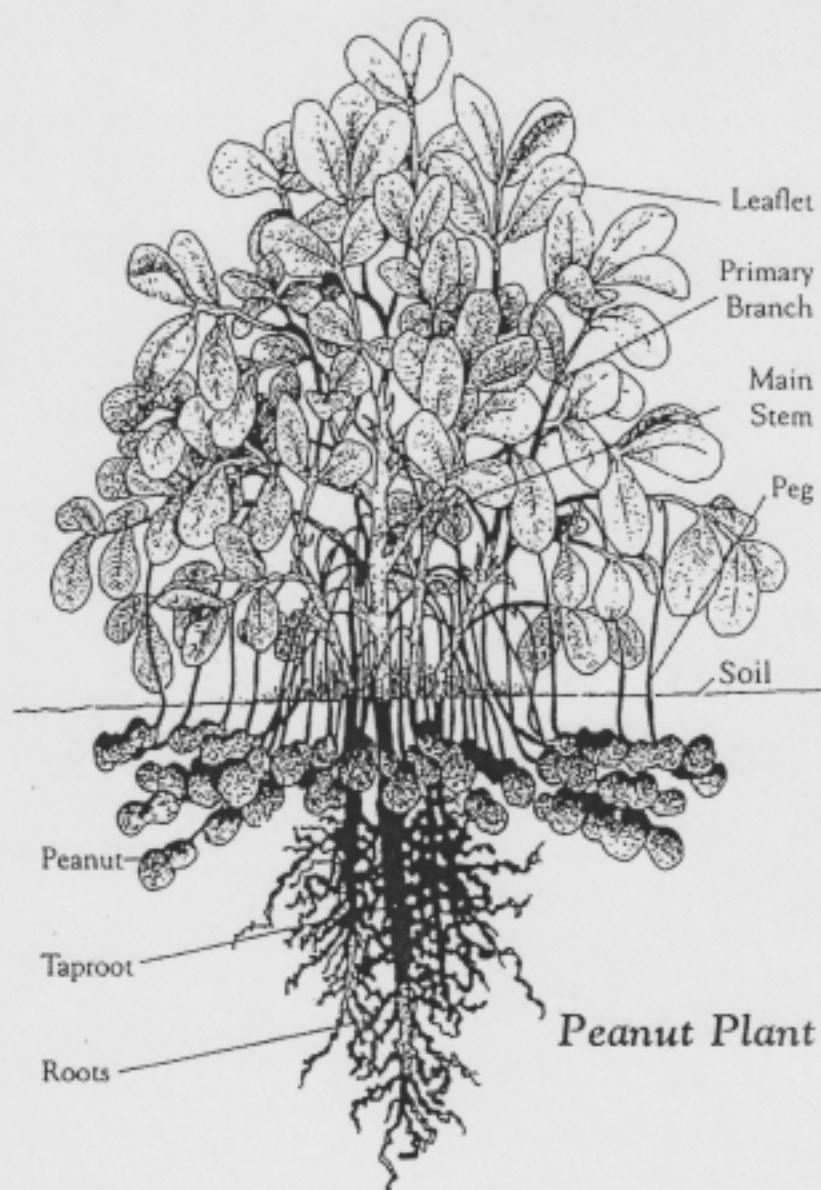


Table 1. Nutritional Analysis of Peanuts

	1 oz. oil roasted unsalted nuts	2 tbsp. smooth-style peanut butter	1 oz. dry roasted unsalted nuts
Calories	165	190	166
Protein	7.5 g	8 g	6.7 g
Total fat	14 g	16 g	14 g
(Saturated)	2 g	3 g	2 g
(Monounsaturated)	7 g	8 g	7 g
(Polyunsaturated)	4 g	4 g	4 g
Cholesterol	0 g	0 g	0 g
Vitamin E	3.1 IU	3.1 IU	3.1 IU
Potassium	193 mg	214 mg	187 mg
Magnesium	52.4 mg	50.9 mg	49.9 mg
Niacin	4 mg	4.3 mg	3.8 mg

Source: USDA-ARS Nutrient Data Laboratory
<http://www.nal.usda.gov/fnic/foodcomp/Data/>

Fig. 3. Regions of *Arachis* cultivation. Note that crop production is world-wide, with major centers in North America, South America, Africa, India and China. Cultivated peanuts were introduced into Europe and Africa in the early 1500's. Peanut cultivation was introduced to North America as a consequence of the slave trade from Africa. During this time, peanut (groundnut) cultivation spread to India and China.



Regions of *Arachis* Cultivation



Fig. 4. A well-known peanut necklace, from an Inca Sipán tomb of a warrior priest, approximately 200-500 CE. Gold and silver.
From "Art of the Andes (Incan)",
<http://pom-nov3.pomona.edu/~ggorse%20/51b/images.htm>

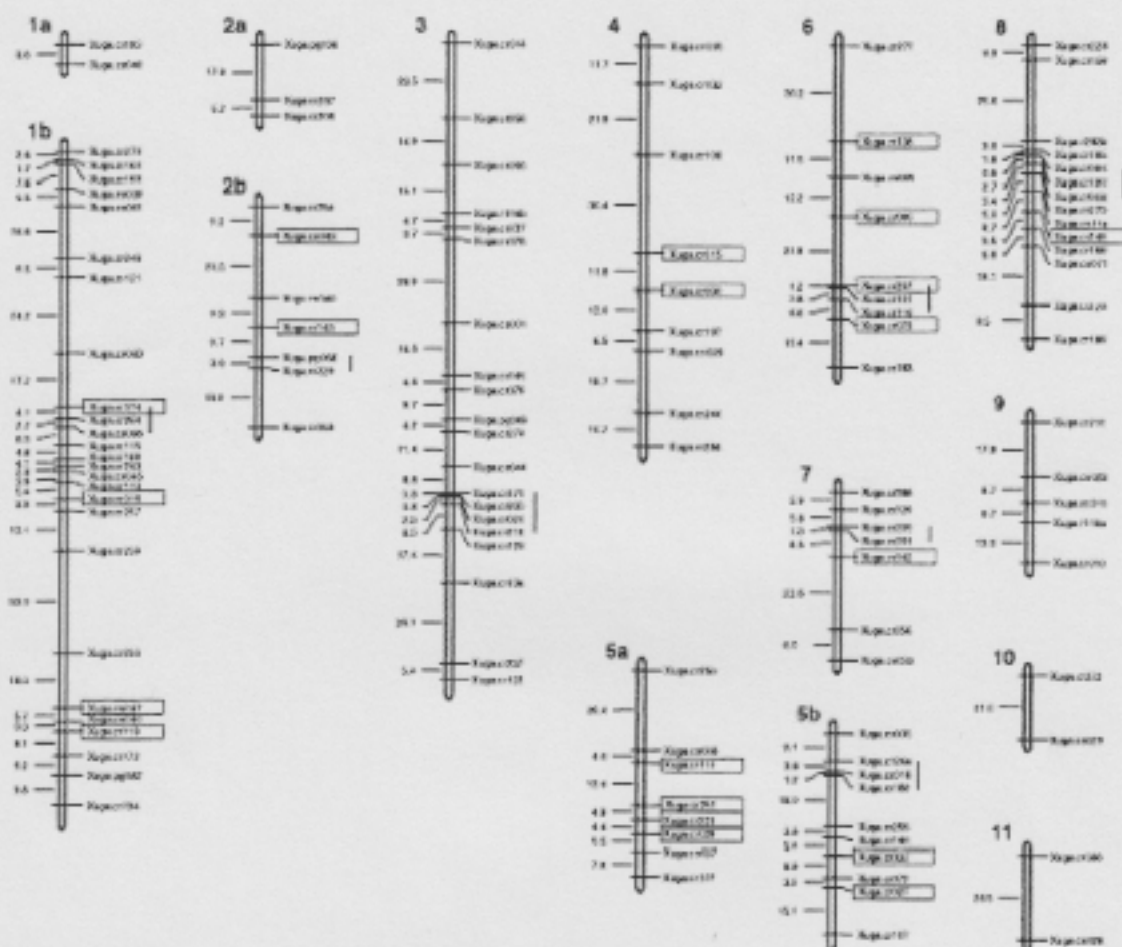


Fig. 1. Peanut RFLP map showing the chromosomal location of probes used to determine cultivated peanut progenitor species.

Fig. 5. An RFLP (restriction fragment length polymorphism) map of the *Arachis hypogaea* chromosomes. Source: Kochert G, HT Stalker, M Gimenes, L Galgaro, CR Lopes and K Moore 1996. RFLP and cytogenetic evidence of the origin and evolution of allotetraploid domesticated peanut, *Arachis hypogaea* (Leguminosae). American Journal of Botany 83:1282-1291.

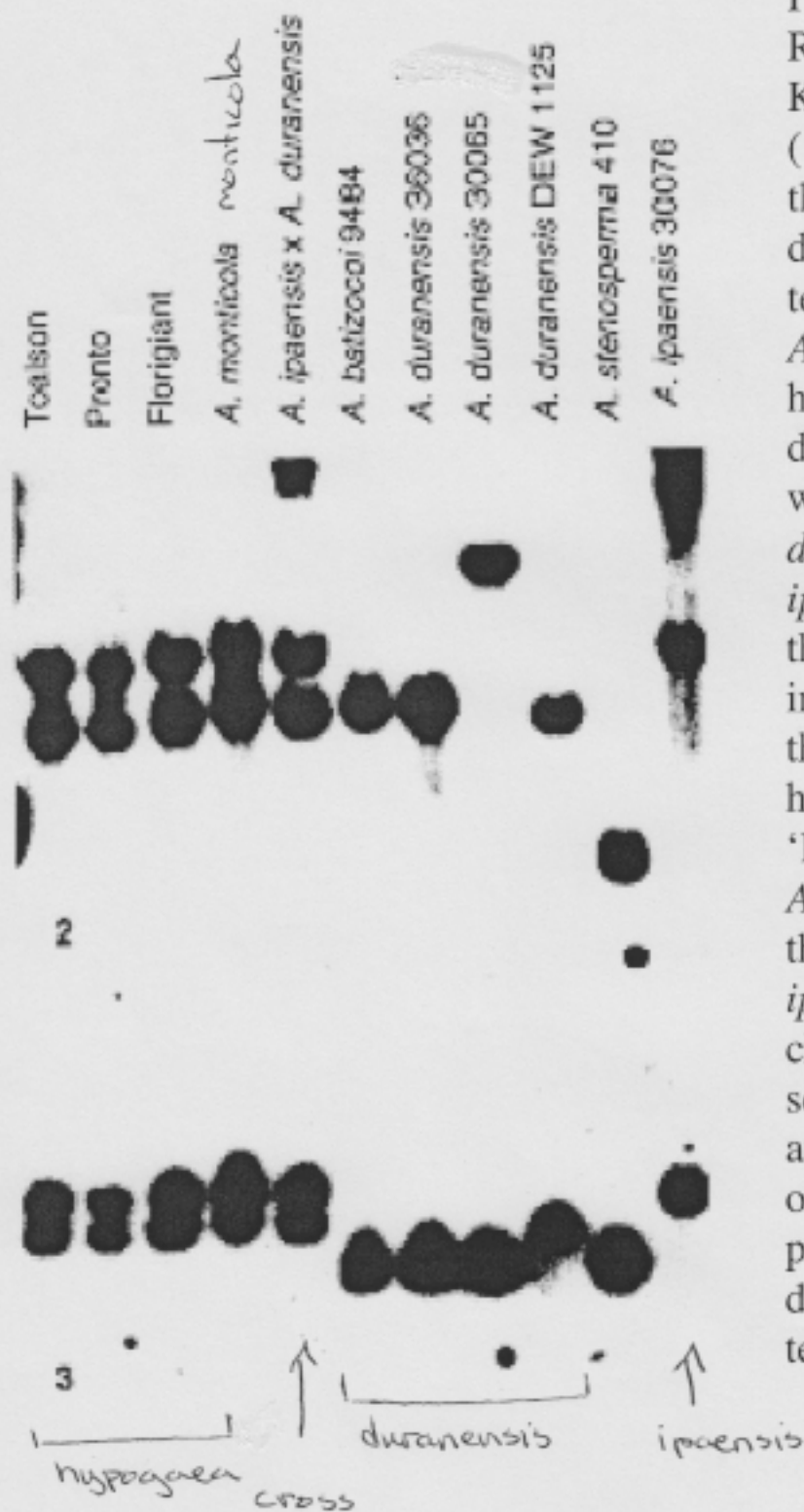
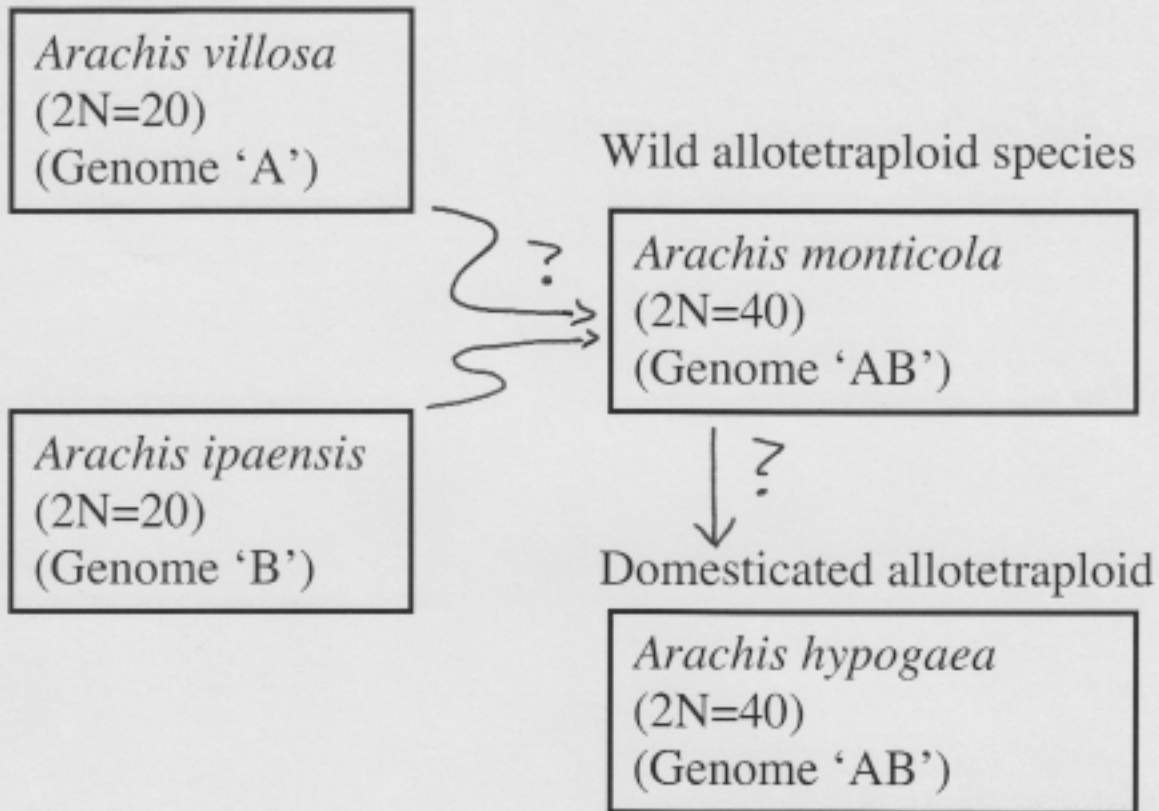


Fig. 6. Example of RFLP analysis. Kochert et al. (1996) concluded that the domesticated tetraploid ($2n=40$) *A. hypogaea* was a hybrid of two diploid ($2n=20$) wild species, *A. duranensis* and *A. ipaensis*. Part of the evidence includes the fact that *A. hypogaea* has distinct 'A' and 'B' chromosomes, *A. duranensis* has the 'A' and *A. ipaensis* the 'B' chromosome. Other scientists disagree and have proposed other wildtype progenitors of the domesticated tetraploid.

Wild progenitor species



Proposed ancestry of the domesticated *Arachis hypogaea*.

Source: Raina SN, Y Mukai 1999. Genomic in situ hybridization in *Arachis* (Fabaceae) identifies the diploid wild progenitors of cultivated (*A. hypogaea*) and replated wild (*A. monticola*) peanut species. *Plant Systematics and Evolution*. 214:251-262.