

## **Topic 15**

**The Peanut: an example of self-pollination, and a tie-in to other topics discussed this semester**

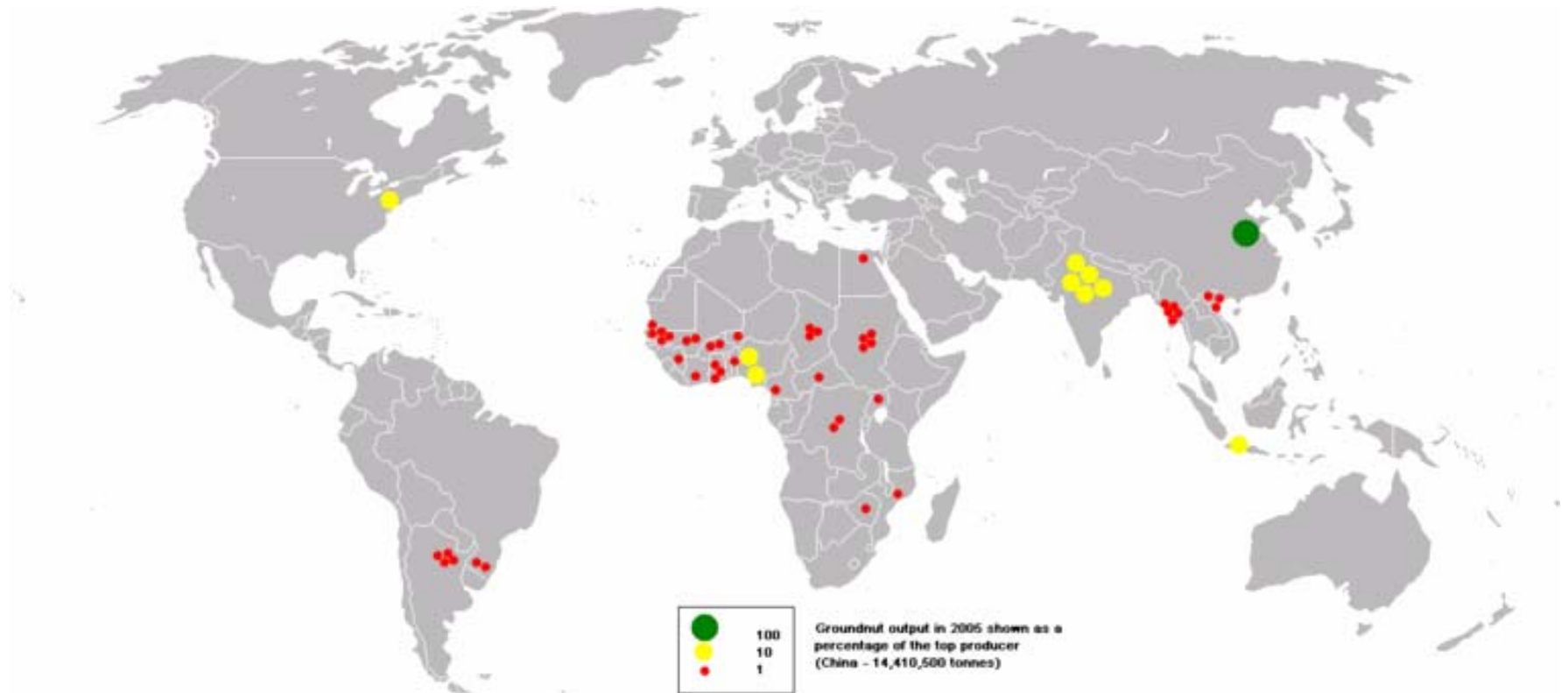
- *Arachis hypogaea* (Fabaceae or Leguminosae)
- Fabaceae = 3<sup>rd</sup> largest family of angiosperms (> 18,000 spp.)
- Peanuts atypical for legumes (underground and indehiscent)



## *Arachis hypogaea*

Native to Brazil

Peanut, groundnut, earthnut, goober(s), pindas, jack nuts, manila nuts, monkey nuts



Src: FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

***Arachis hypogaea***

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Herbaceous

Pinnate leaves

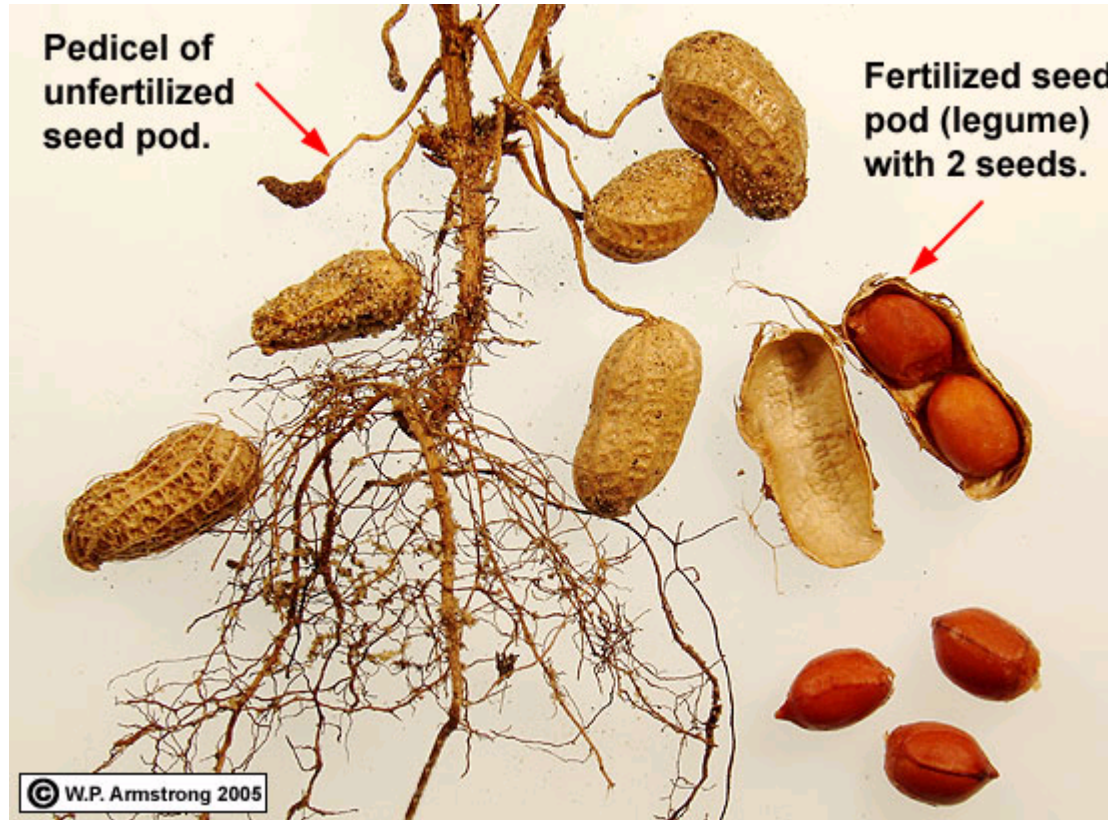
Pedicellate flowers in axils of lower leaves





# ***Arachis hypogaea***

N-fixing root nodules



## ***Arachis hypogaea***

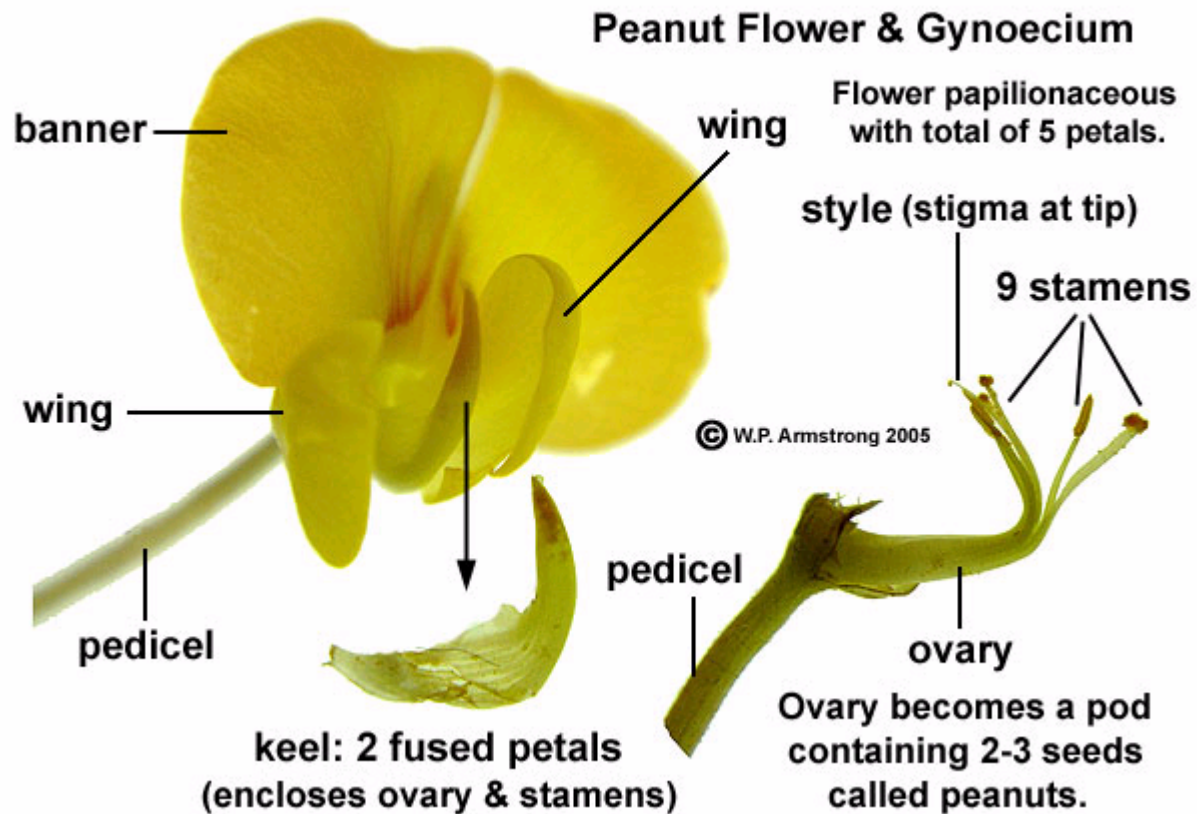
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Calyx: 5 sepals

Corolla: 5 petals

Androecium: Typically 10, here 9 stamens

Gynoecium: 1 carpel with 2-3 ovules



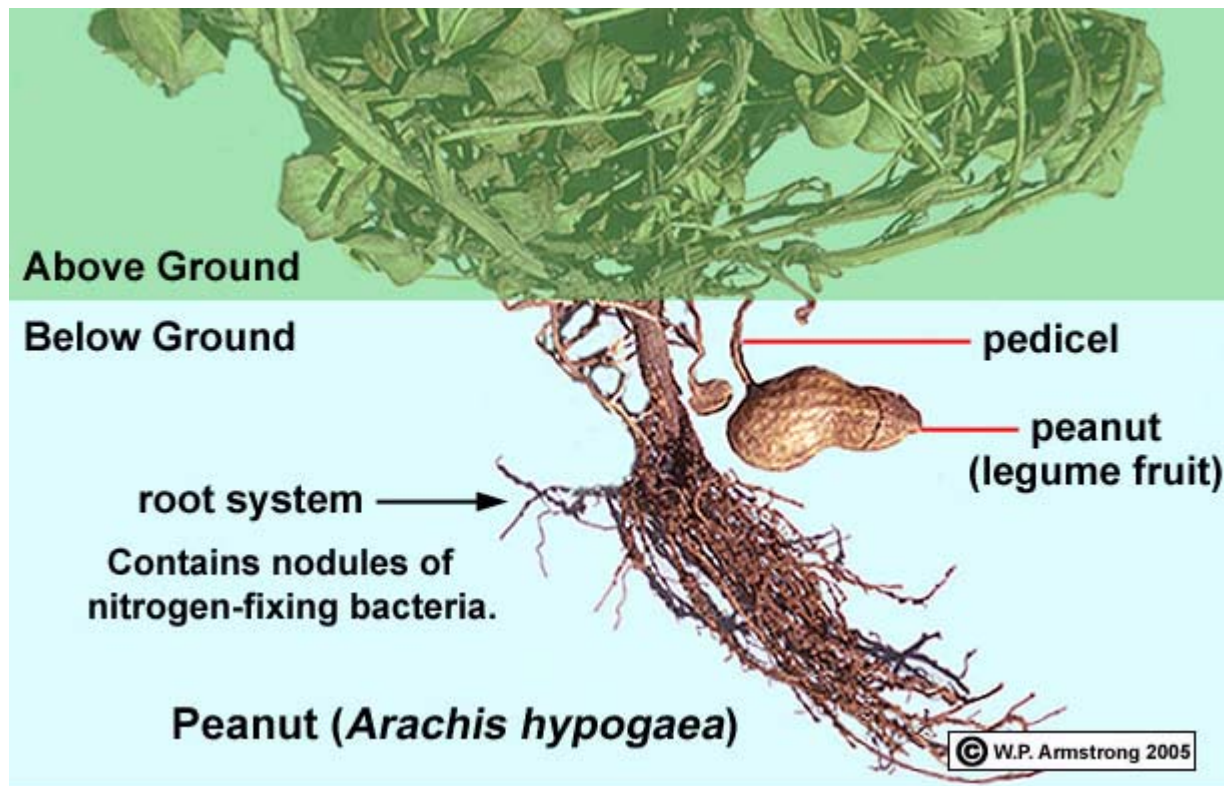
## ***Arachis hypogaea***

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Fruit produced by selfing

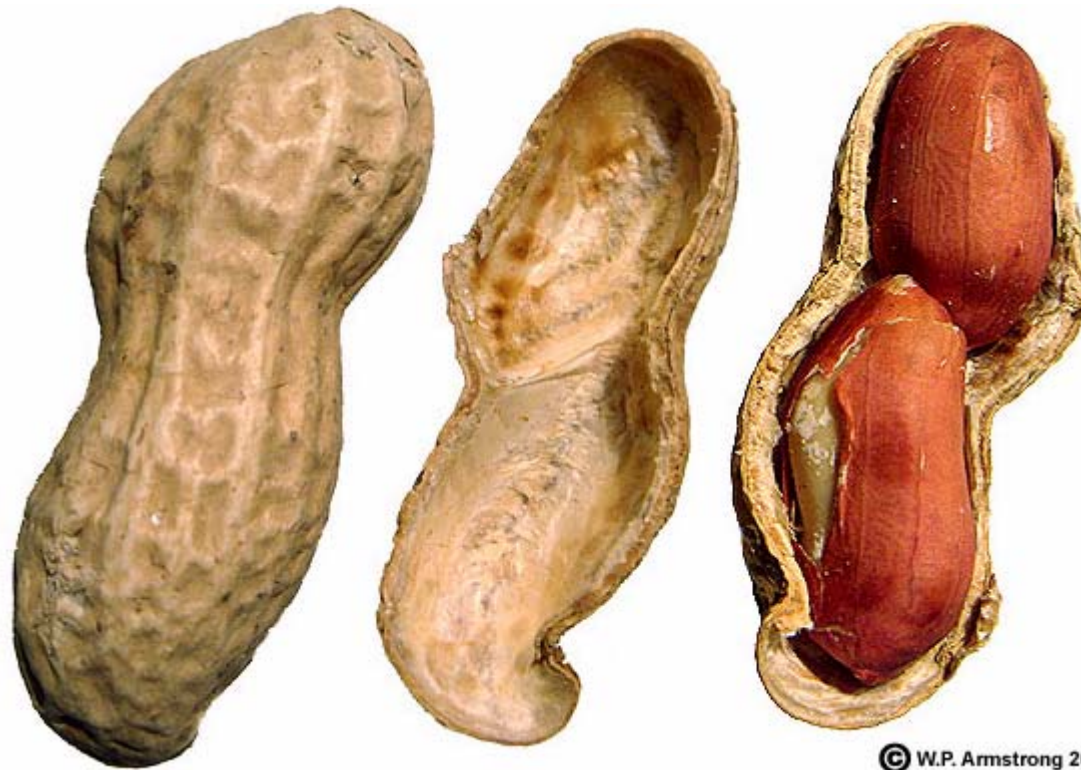
Cells below ovary divide, pushing ovary underground

Fruit ripens into Indehiscent, subterranean legume



**Arachis hypogaea**

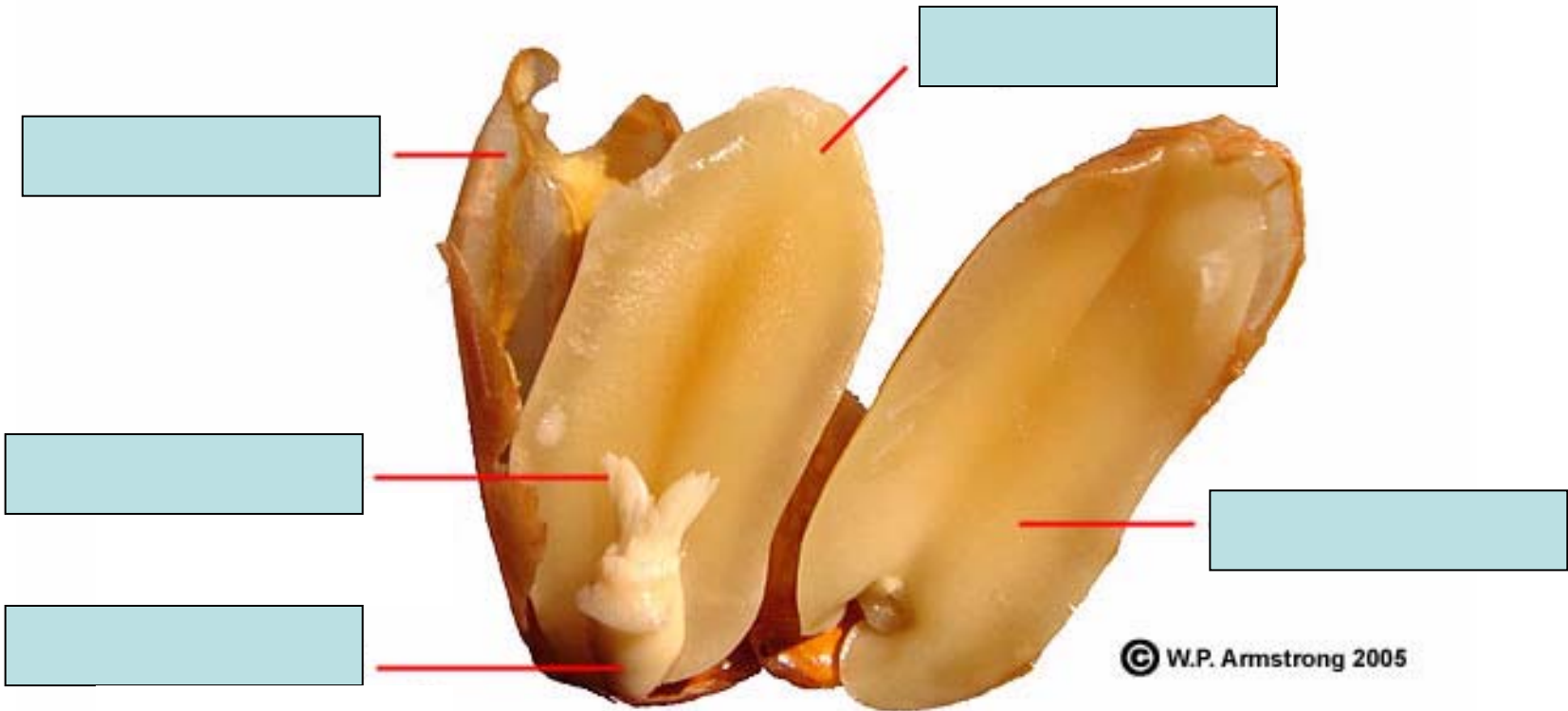
In this picture, find the pericarp, seeds, seed coats





***Arachis hypogaea***

Label the structures of the seed.



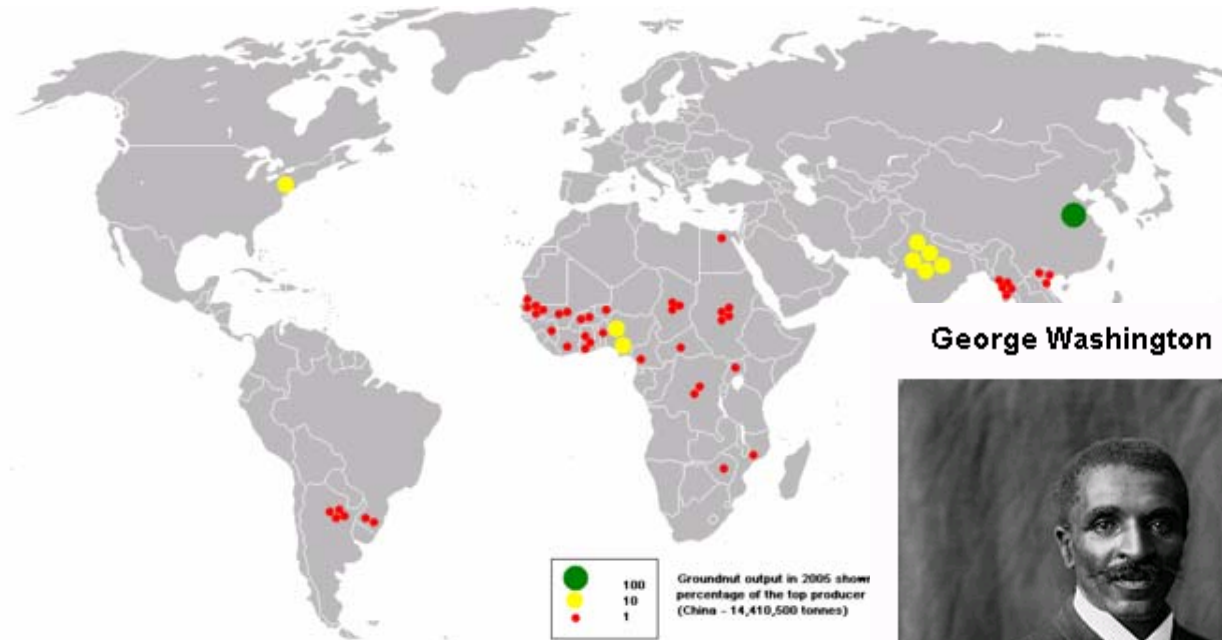
**Peanut Seed (*Arachis hypogaea*)**

# *Arachis hypogaea*

## Economic importance.

<b>Peanut, valencia, raw</b>	
<b>Nutritional value per 100 g (3.5 oz)</b>	
Energy	570 kcal 2390 kJ
<b>Carbohydrates</b>	21 g
- Sugars	0.0 g
- Dietary fiber	9 g
<b>Fat</b>	48 g
- saturated	7 g
- monounsaturated	24 g
- polyunsaturated	16 g
<b>Protein</b>	25 g
Thiamin (Vit. B1)	0.6 mg 46%
Riboflavin (Vit. B2)	0.3 mg 20%
Niacin (Vit. B3)	12.9 mg 86%
Pantothenic acid (B5)	1.8 mg 36%
Vitamin B6	0.3 mg 23%
Folate (Vit. B9)	246 µg 62%
Vitamin C	0.0 mg 0%
Calcium	62 mg 6%
Iron	2 mg 16%
Magnesium	184 mg 50%
Phosphorus	336 mg 48%
Potassium	332 mg 7%
Zinc	3.3 mg 33%

Percentages are relative to US recommendations for adults.  
Source: [USDA Nutrient database](#)



**George Washington Carver**



**Born** July 12, 1864  
Diamond, Missouri, U.S.

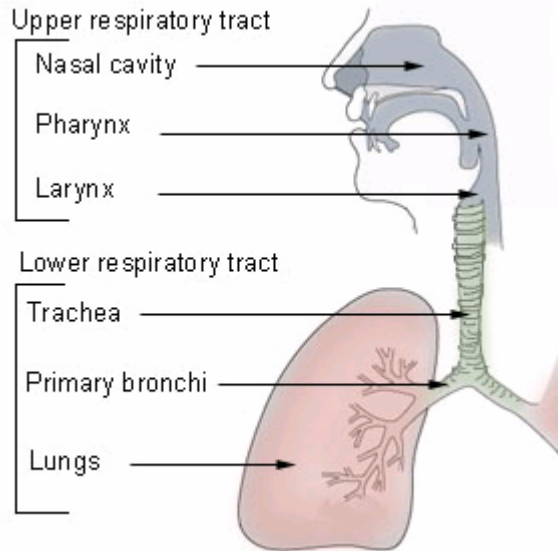
**Died** January 5, 1943 (aged 78)  
Tuskegee, Alabama, U.S.

## *Arachis hypogaea*

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1. Severe allergic reactions to peanuts.

Symptoms: laryngospasm and/or anaphalactic shock.



2. Contamination with mold *Aspergillus flavus* (aflatoxin)

