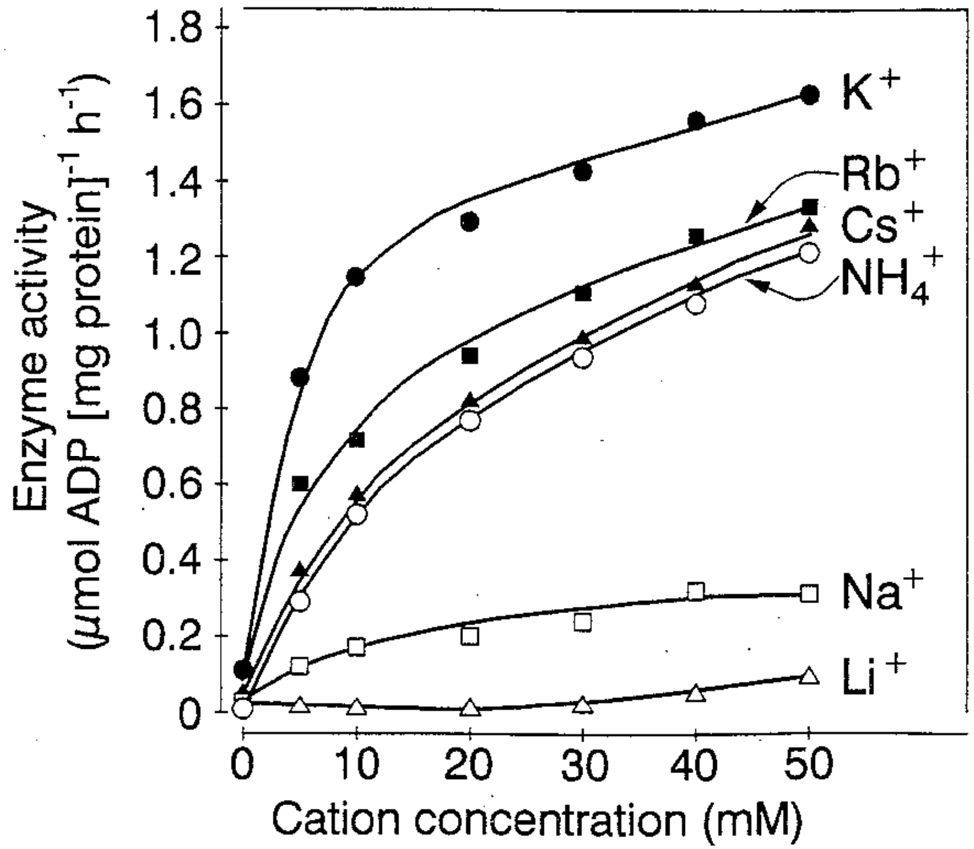
AGRY 515 2008

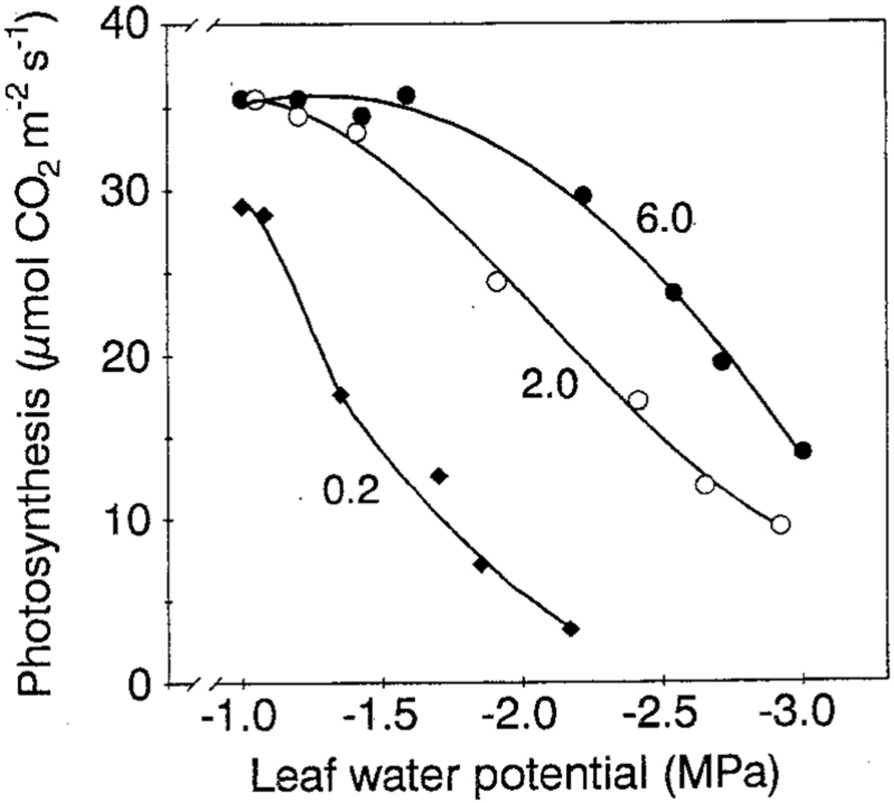
- K
- P
- S

Fig. 1. Effect of univalent cations on enzyme activity. (Fig. 8.3 in Marschner, 1995)



Effect of univalent cations (as chlorides) on the activity of ADP-glucose starch synthase from maize. (Nitsos and Evans, 1969.)

Fig. 2. Effect of K supply and leaf water potential on leaf photosynthesis. (Fig. 8.31 in Marschner, 1995.)



Effect of K^+ supply (mM) to wheat plants on photosynthesis of leaves at declining leaf water potentials. (Based on Sen Gupta *et al.*, 1989.)

Fig. 3. Schematic of role of K in cell extension & osmoregualtion. (Fig. 8.32 in Marschner, 1995.)

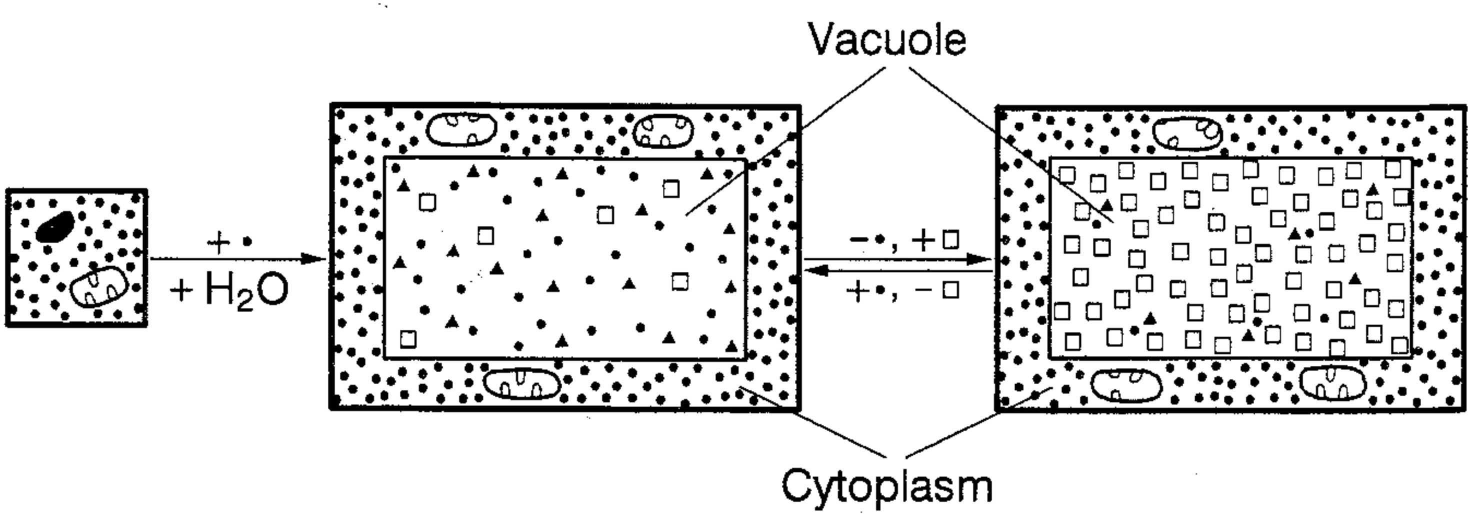


Fig. 8.32 Model of the role of potassium and other solutes in cell extension and osmoregulation. Key: ●, K^+; □, reducing sugars; sucrose, Na^+; ▲, organic acid anions.

Fig 4. Schematic of stomatal opening driven by K+ transport. (Fig. 8.34 in Marschner, 1995.)

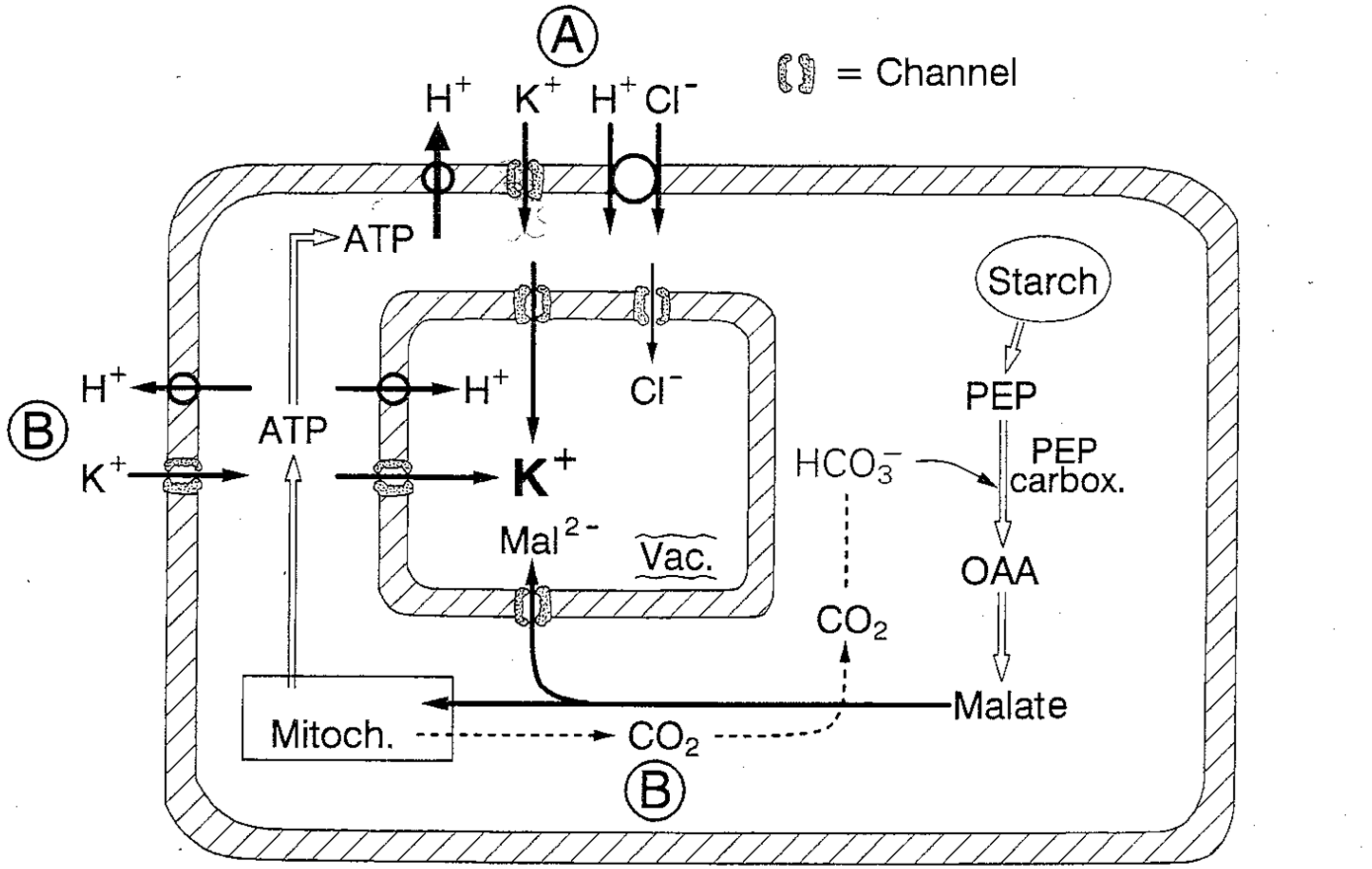
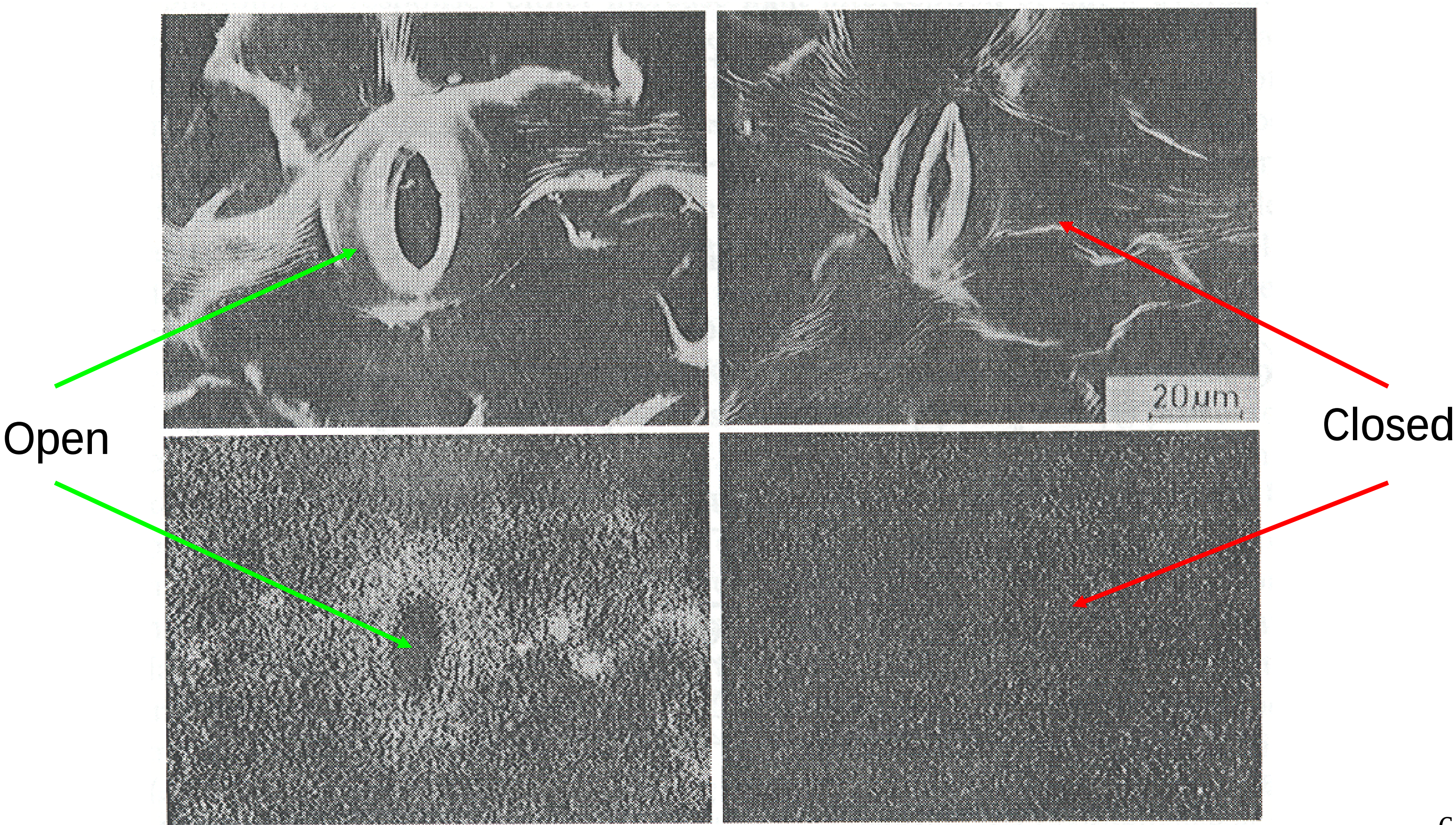


Fig. 8.34 Model of stomatal opening driven by proton pumps and $K^+ + Cl^-$ transport (A) or K^+ + malate transport (B) into guard cell vacuole. (Modified from Raschke *et al.*, 1988.)

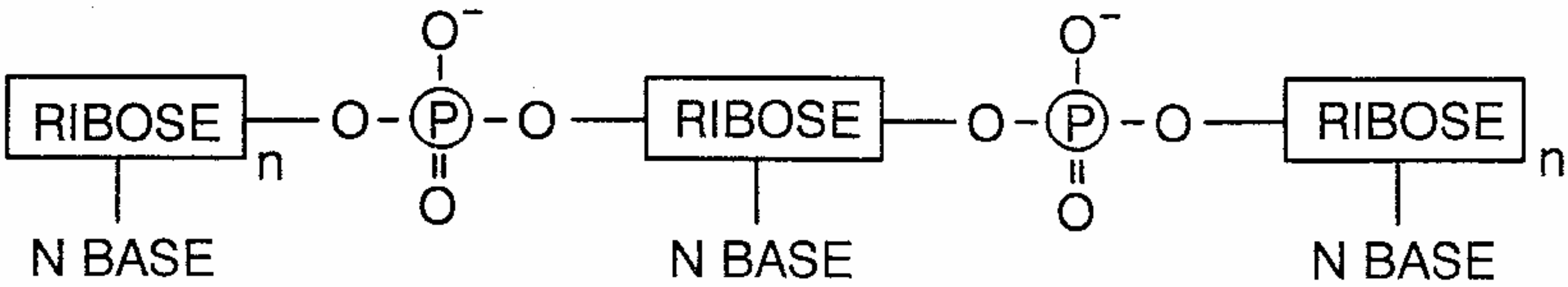
Fig. 5. Stomata and K distribution. (Fig. 8.33 Marschner, 1995.)

Electron Probe Analyzer Picture



X-ray Microprobe Images of K Distribution

Fig. 6. In both DNA and RNA, phosphate forms a bridge between ribonucleoside units to form macromolecules...



(Section of RNA molecule)

Marschner, 1995, p. 265.

Fig. 7. Model of a biomembrane with polar lipids (Fig. 2.4 from Marschner, 1995) and the phospholipid lecithin.

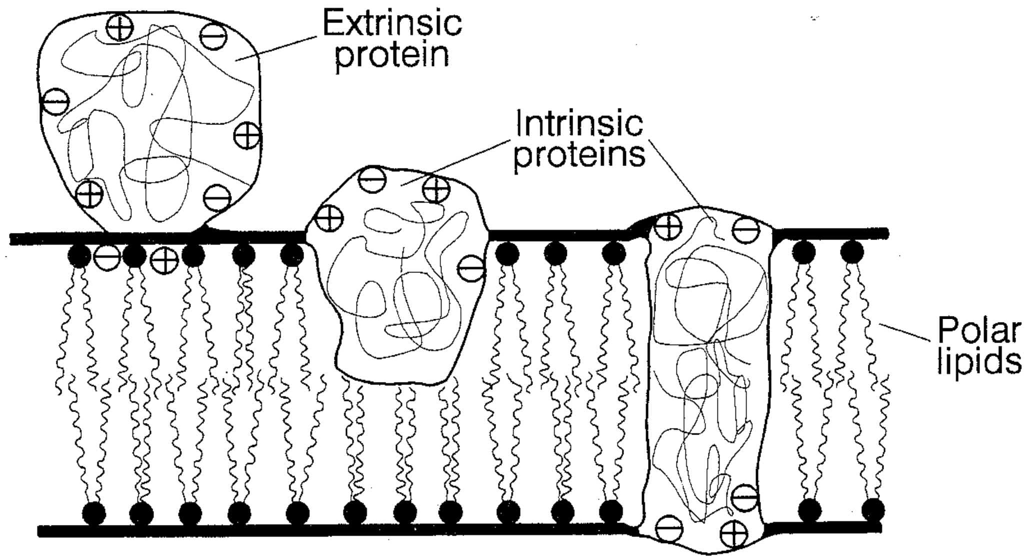
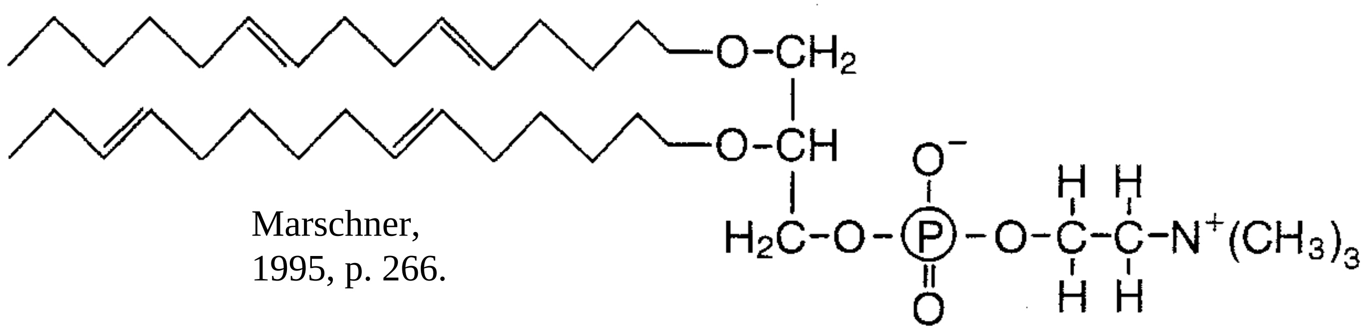
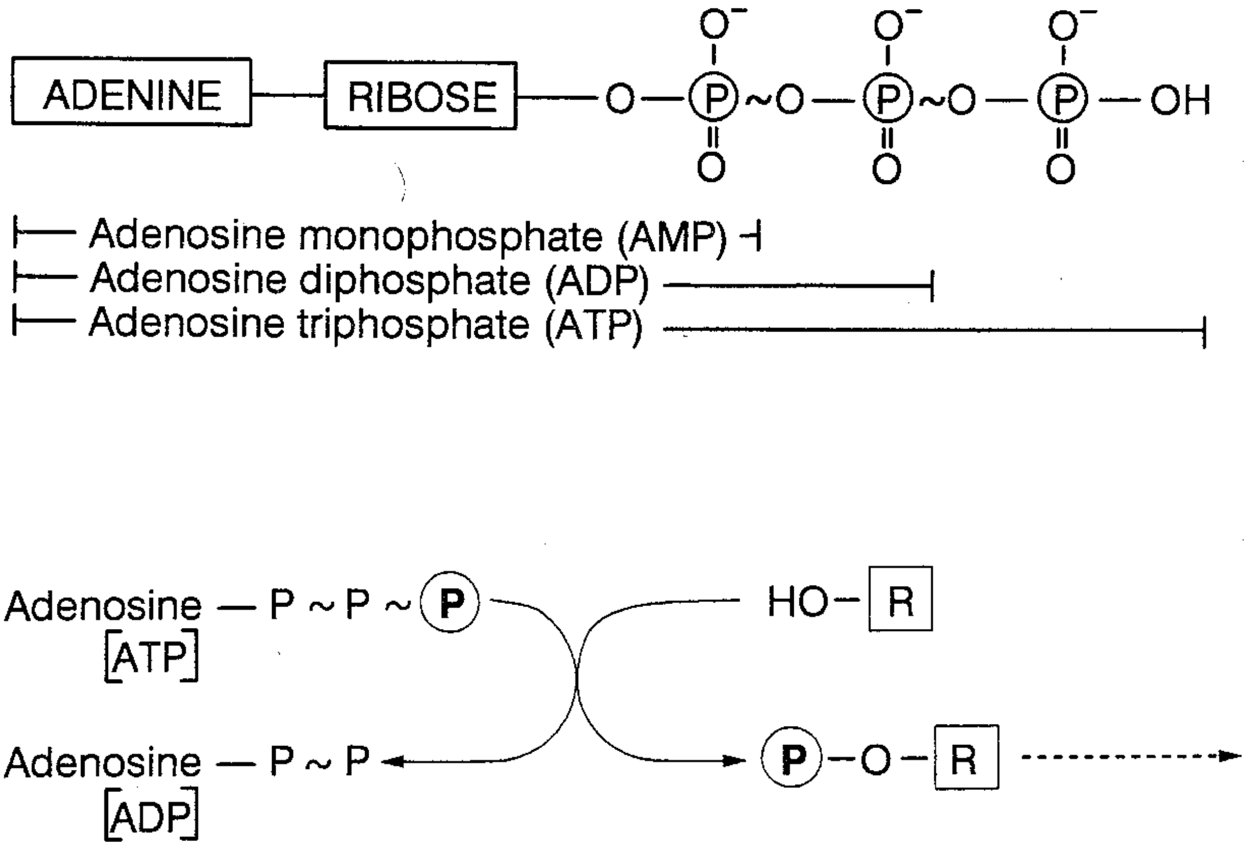


Fig. 2.4 Model of a biomembrane with polar lipids and with either extrinsic or intrinsic, integrated proteins. The latter can cross the membrane to form 'protein channels'.



Marschner,
1995, p. 266.

Fig. 8. P and Energy Metabolism



Marschner, 1995, pp. 266 - 267.

Table 1. Impact of P deficiency on soybean. (Table 8.17 from Marschner, 1995)

Table 8.17

Effect of Phosphorus Deficiency on Various Growth Parameters and Contents of Phosphorus and Carbohydrates in Soybean[a]

Parameter			Treatment High P	Treatment Low P
Leaf area (dm^2)			12.1	1.8
No. primary trifoliates			7	4
Shoot/root dry wt ratio			~4.2	~1.0
Chlorophyll ($mg\ dm^{-2}$)			3.02	2.80
P content leaves P_i			4.43	0.28
($mg\ g^{-1}$ dry wt) P_{org}			2.44	0.59
P content (total P mg^{-1} dry wt)				
Stem and petioles			5.84	1.14
Roots			10.54	1.29
Ratio $\frac{\text{Total Root P}}{\text{Total Shoot P}}$			0.54	1.57
Carbohydrates	Leaves	Starch	0.4	12.8
	($g\ m^{-2}$ leaf)	Sucrose	0.7	0.2
	Roots	Starch	23	160
	($mg\ g^{-1}$ fresh wt)	Sucrose	16	177

[a]Based on Fredeen *et al.* (1989). Reprinted by permission of the American Society of Plant Physiologists.

Fig. 9. Pathways of S assimilation. (Fig. 8.18, Marschner, 1995.)

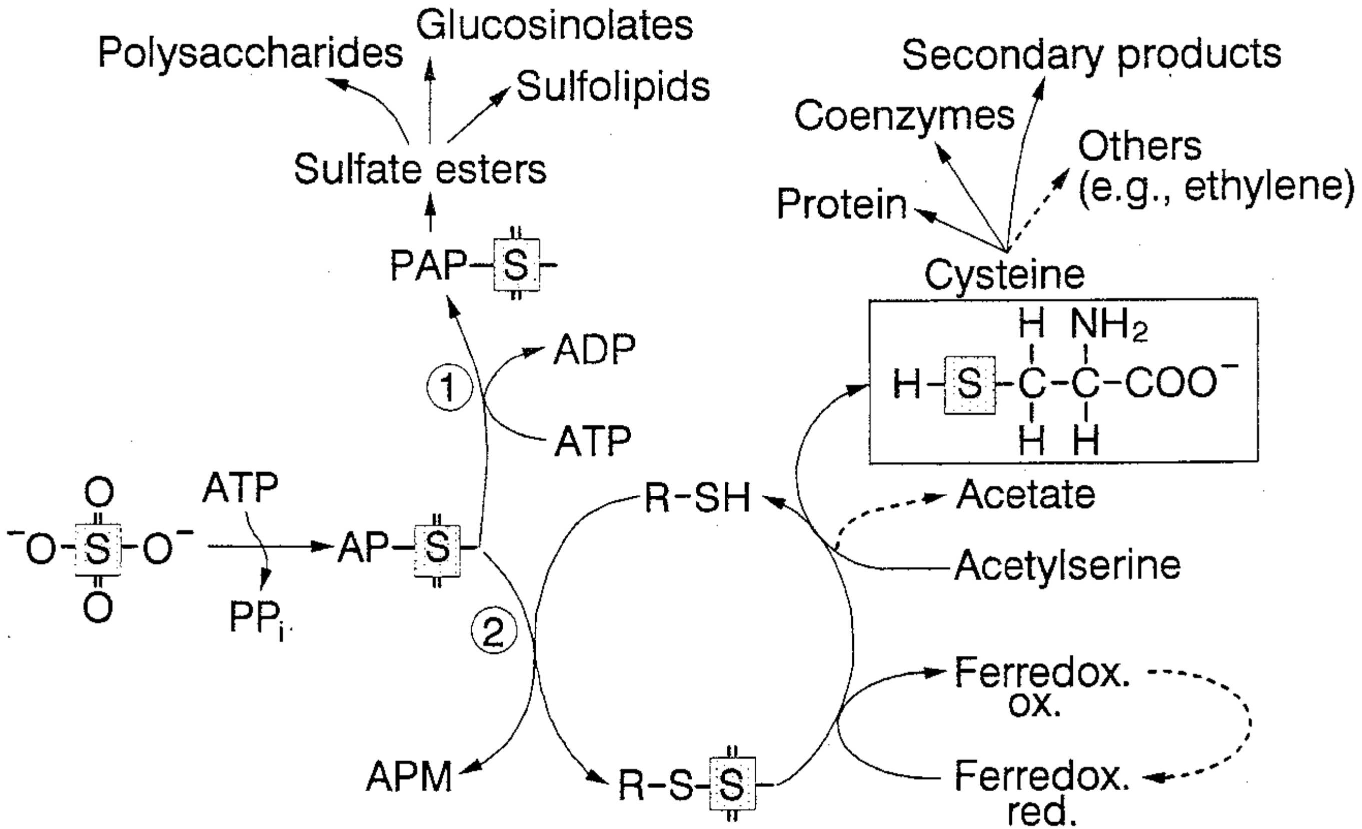
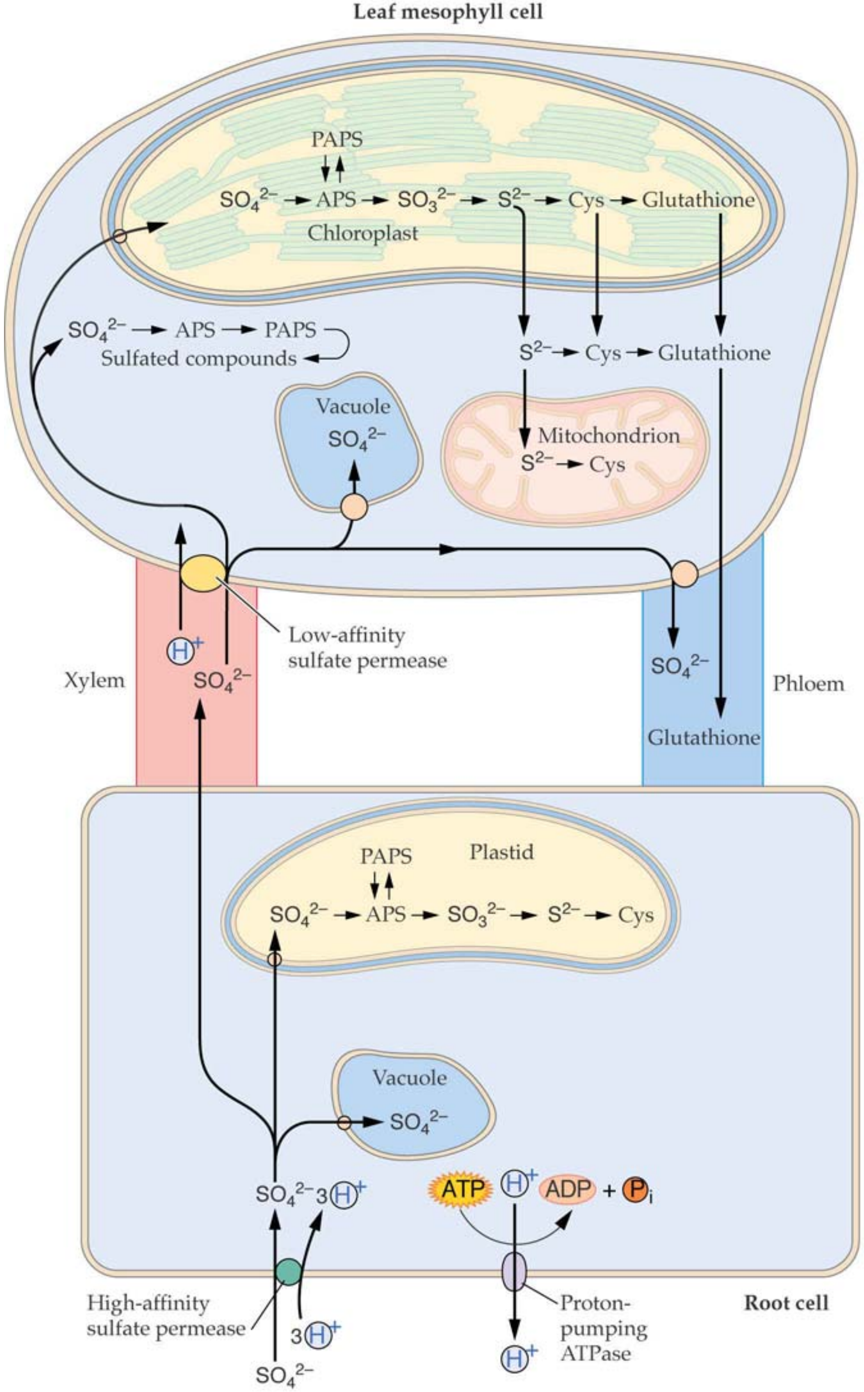


Fig. 8.18 Pathways of sulfur assimilation in higher plants and green algae. (1) Synthesis of sulfate esters; (2) sulfate reduction according to the APS pathway. (Based on Schiff, 1983 and Schmidt and Jäger, 1992.)

Fig. 10. S uptake, reduction and transport in plants



Ref. ASPB