

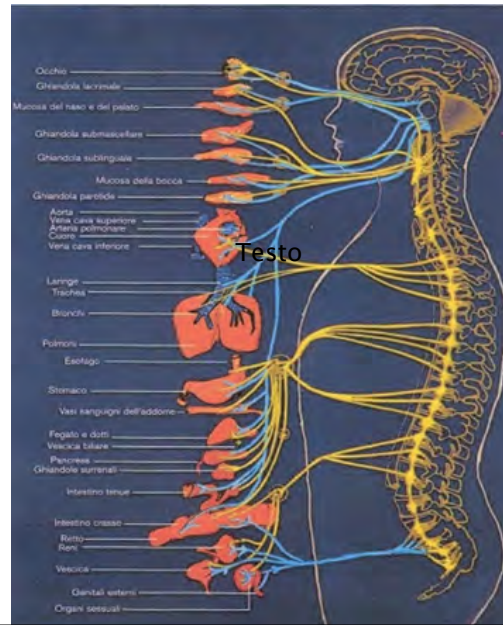
L'ANALISI ELETTROCHIMICA DEI VIVENTI

**Studio preliminare
V° Workshop DISF Working Group
Roma, 12-13 maggio 2012
Marco V. Ginatta**

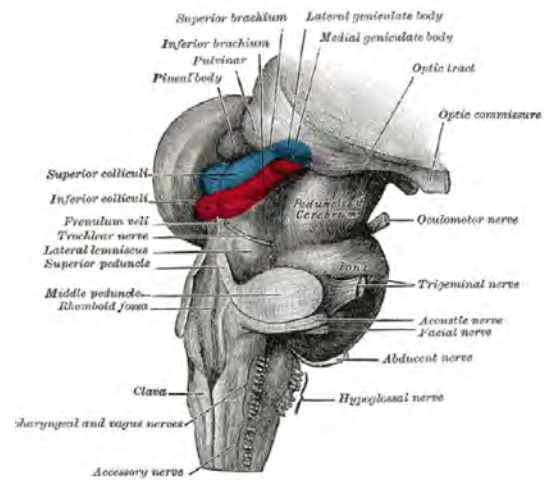
PRIMA PARTE

**L'elettrochimica alla base del
funzionamento del Corpo Umano**

Schema semplificato del Sistema Nervoso



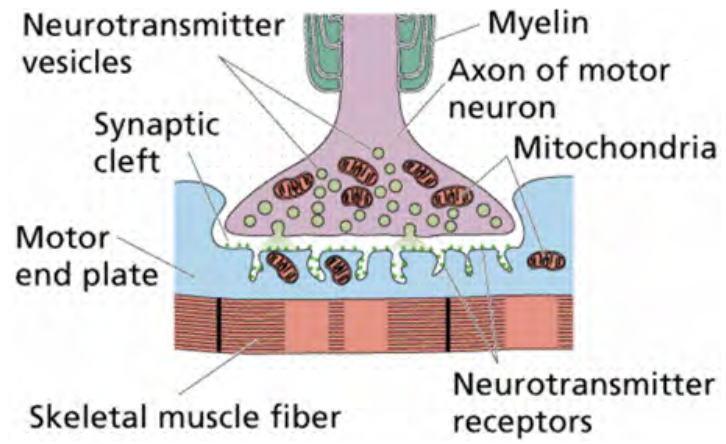
Raggruppamento nervi al centro dell'encefalo



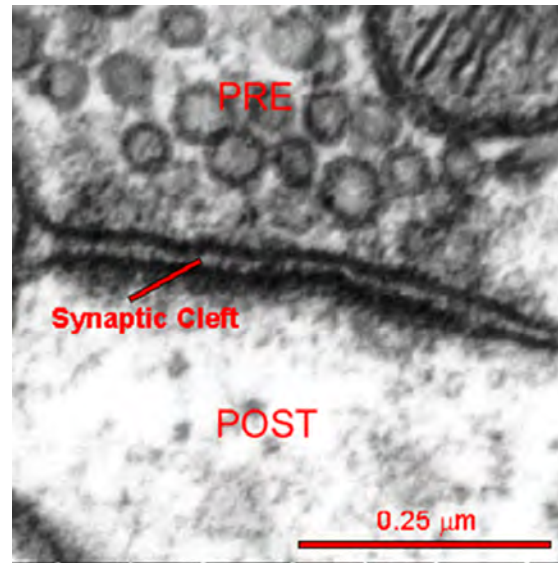
Potenziale d'azione dei muscoli



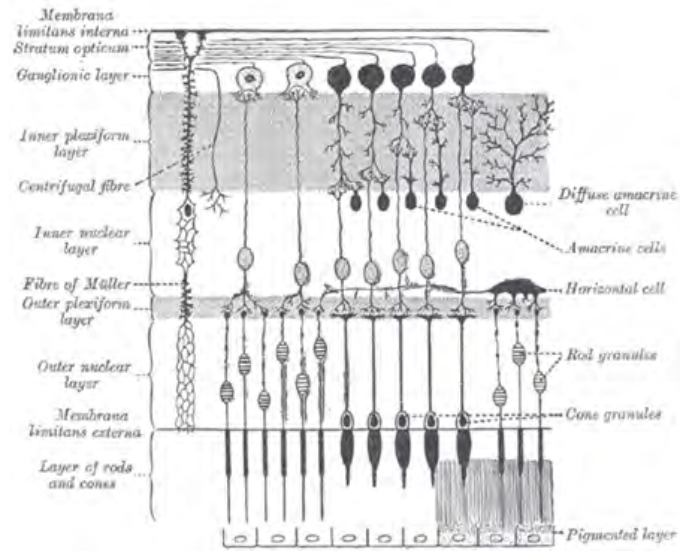
Schema di sinapsi



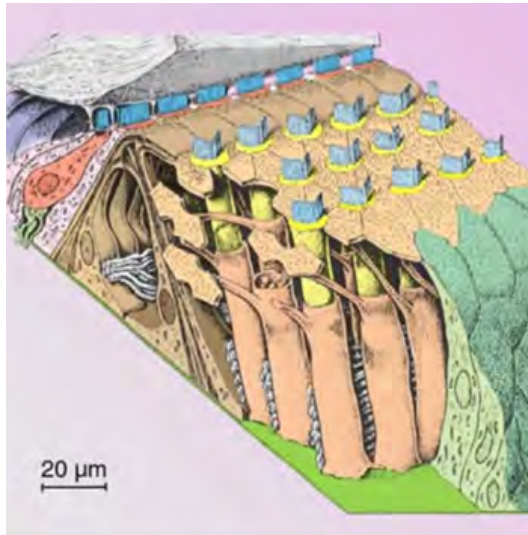
Sinapsi



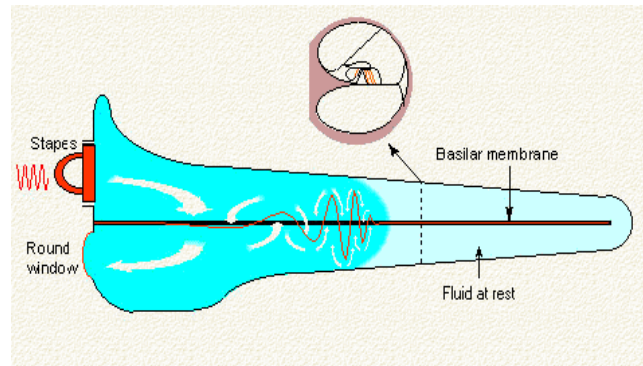
Fotoelettrochimica dell'occhio



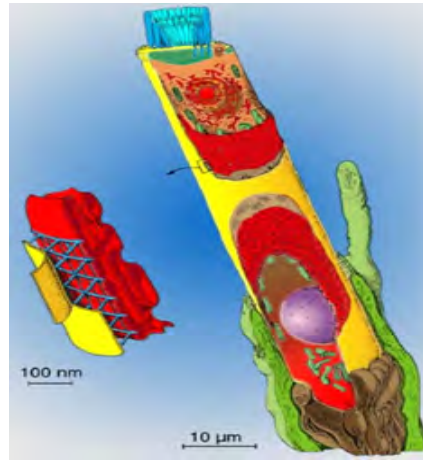
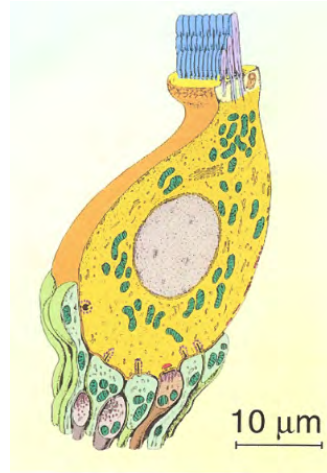
Piezolettrochimica dell'orecchio



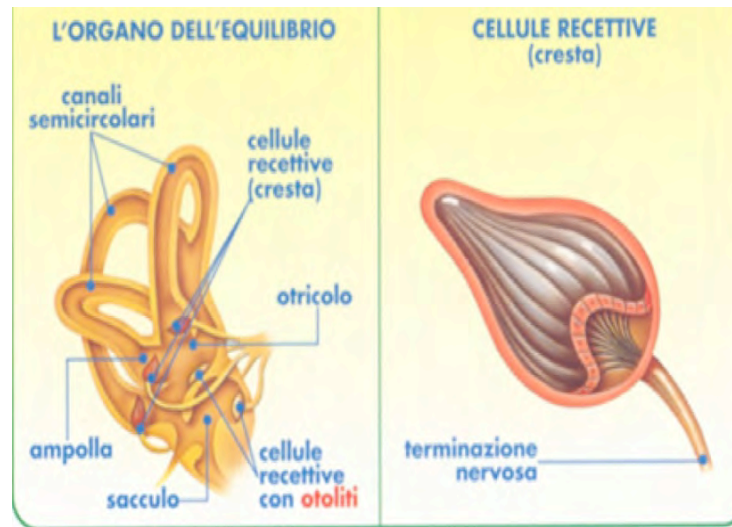
Coclea linearizzata



Cellule ciliate



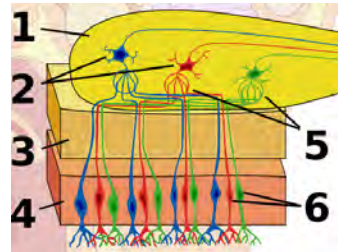
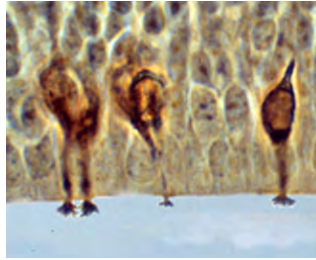
Organo dell'equilibrio e accelerazione



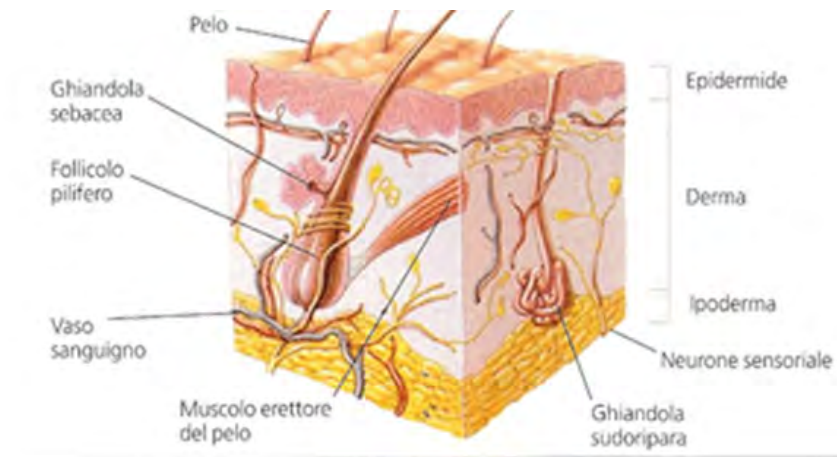
Elettrodi ionospecifici del gusto



Elettrodi ionospecifici dell'olfatto

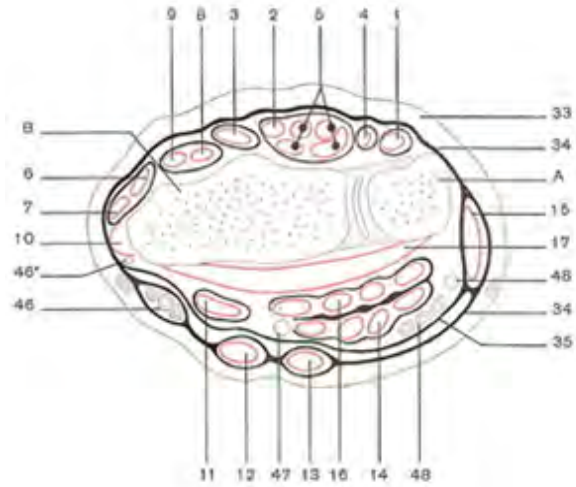


Derma e muscolo erettore del pelo



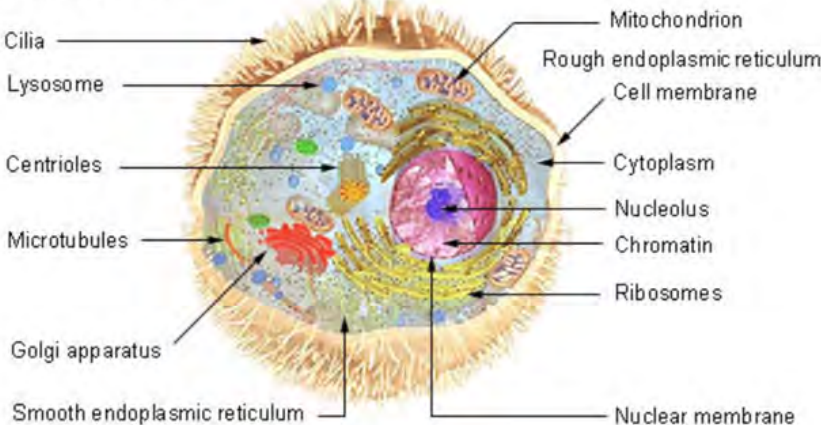
Controllo delle articolazioni

Sezione orizzontale del polso destro,
segmento inferiore della sezione
(guaine tendinee in nero)

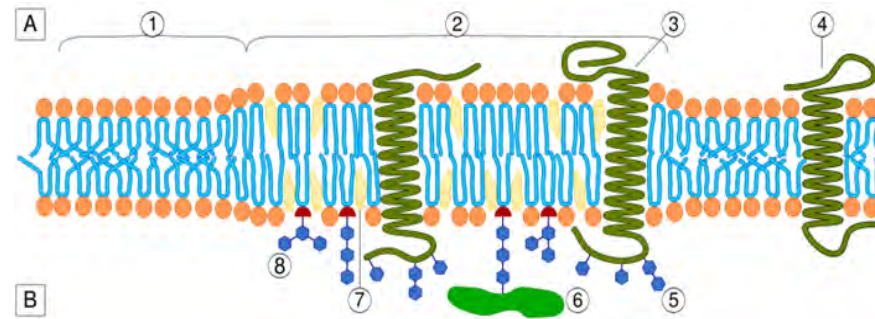


Percorsi delle proteine

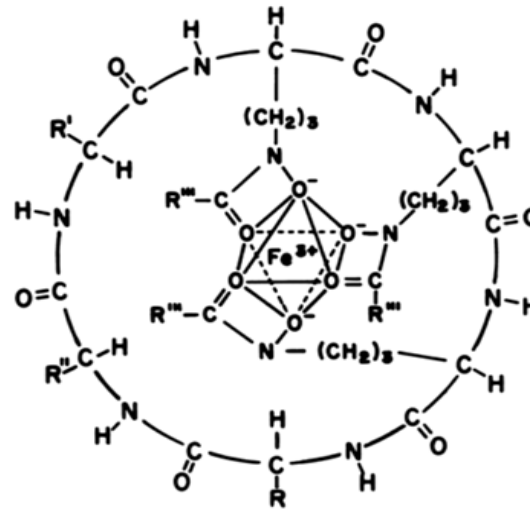
Cell Structure



Zattera delle proteine



Siderofori



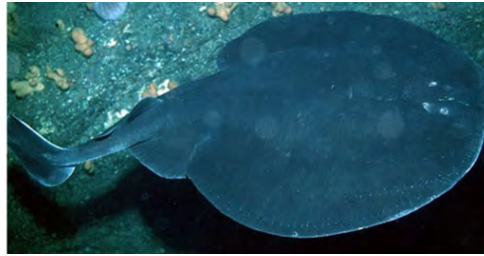
Sistema Immunitario



SECONDA PARTE

**L'elettrochimica nel funzionamento
degli animali**

Torpedini



Generatore di potenza elettrica dei pesci



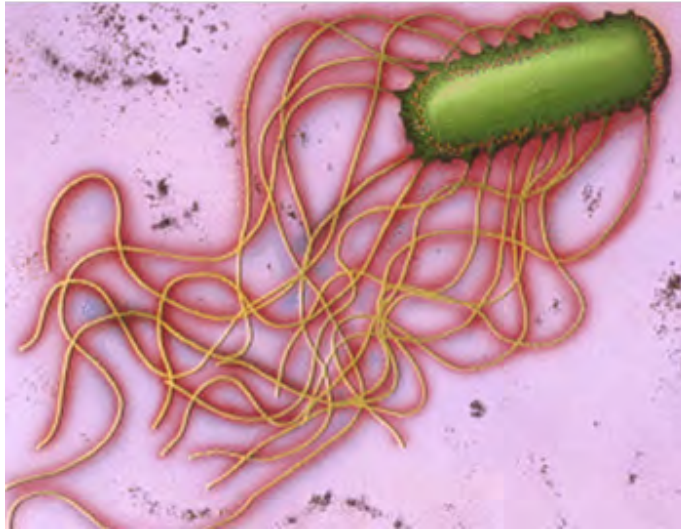
Coleottero bombardiere



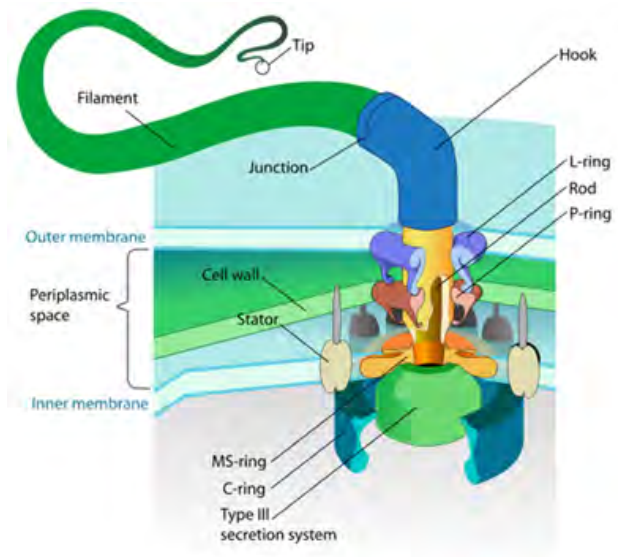
Elettrochemiluminescenza



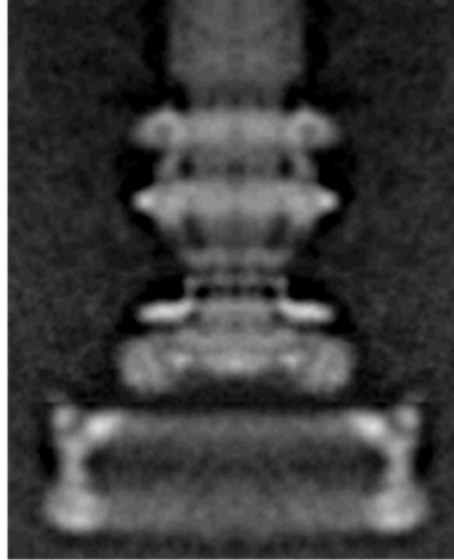
Batterio con flagelli



Motorino elettrochimico del flagello



**Immagine TEM motorino
elettrochimico**



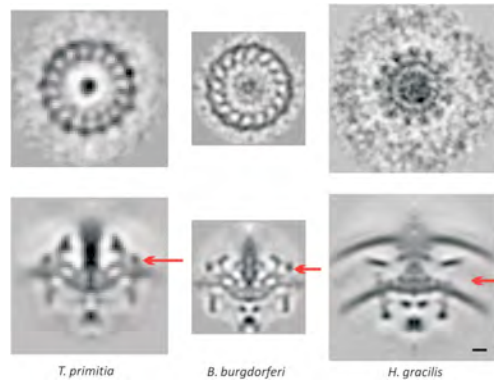
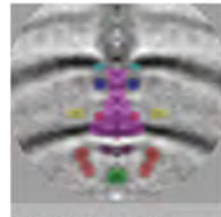
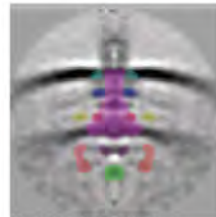


Figure 5 from Songye Chen et al.
The *EMBO Journal* online publication
14 June 2011 doi: 10.1038/emboj.2011.186

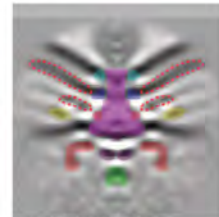
Tipi diversi di batteri con il medesimo motore



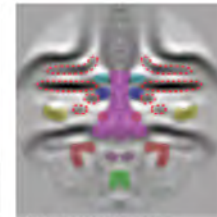
Caulobacter crescentus



Hyphomonas neptunium



Campylobacter jejuni



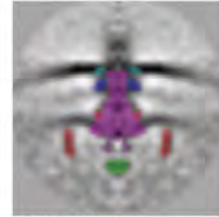
Helicobacter hepaticus



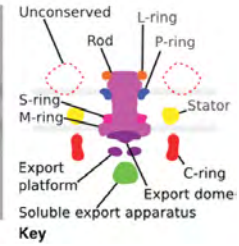
Treponema primitia



Borellia burgdorferi



Acetonea longum



Occhi di farfalla



Iride rettangolare e membrana nittinante

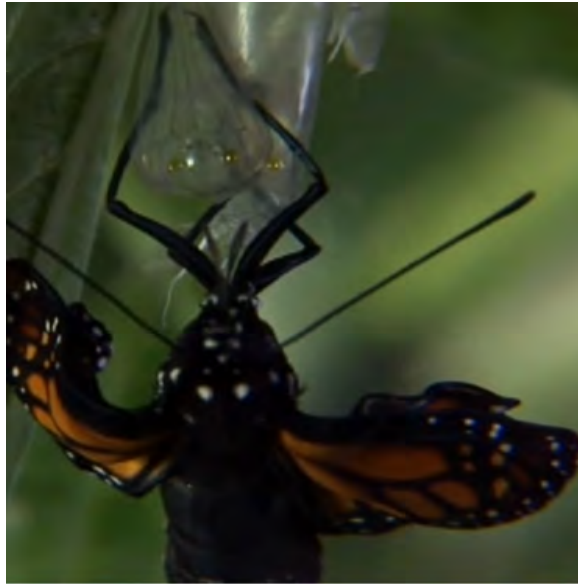


Limulo con quattro paia specializzate di occhi

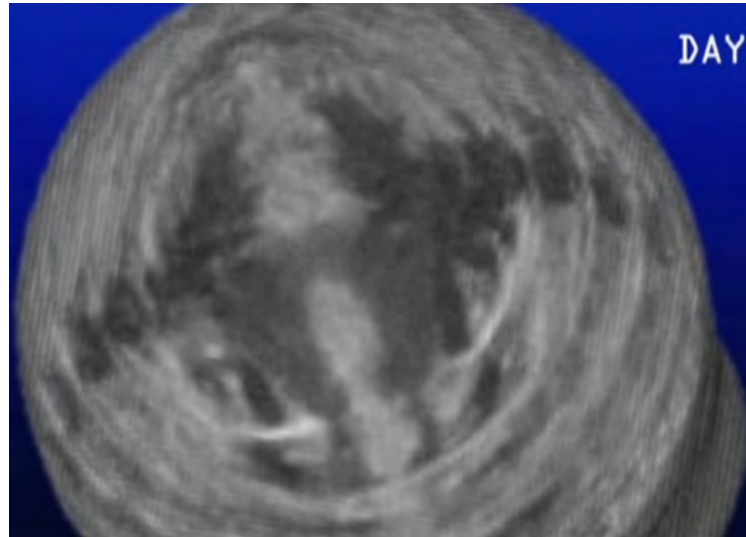


LIMULO DI 450 MILIONI DI ANNI FA

Farfalla che esce dalla Crisalide



La metamorfosi all'interno della crisalide



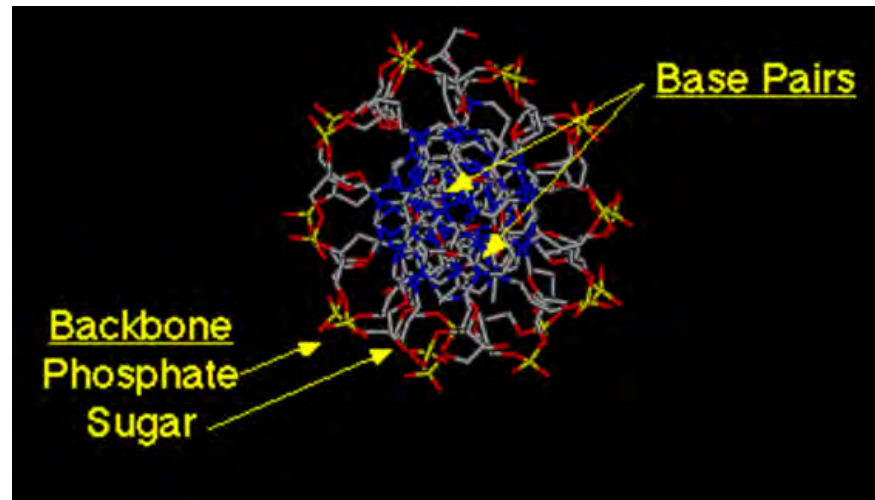
Controllo del volo in insetti e uccelli



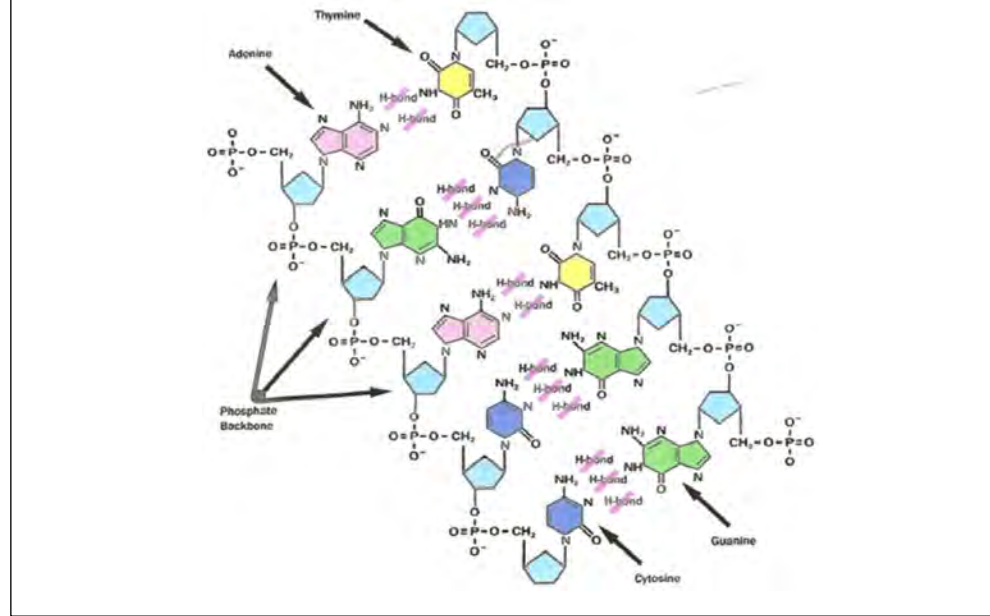
Picchio



Elettrochimica della Clonazione



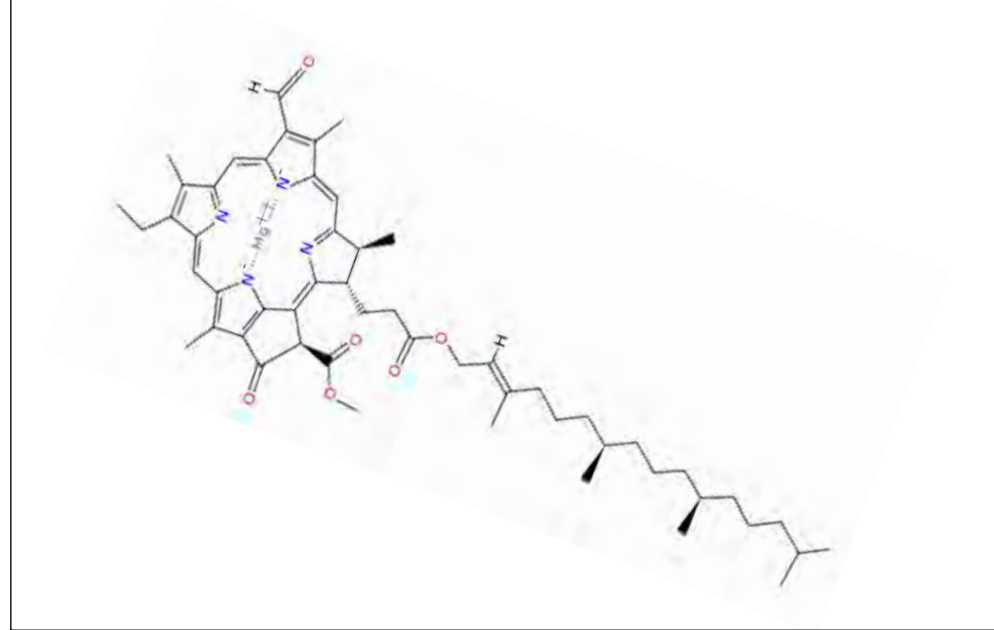
Legame Idrogeno della molecola DNA



TERZA PARTE

L'elettrochimica nel funzionamento dei vegetali

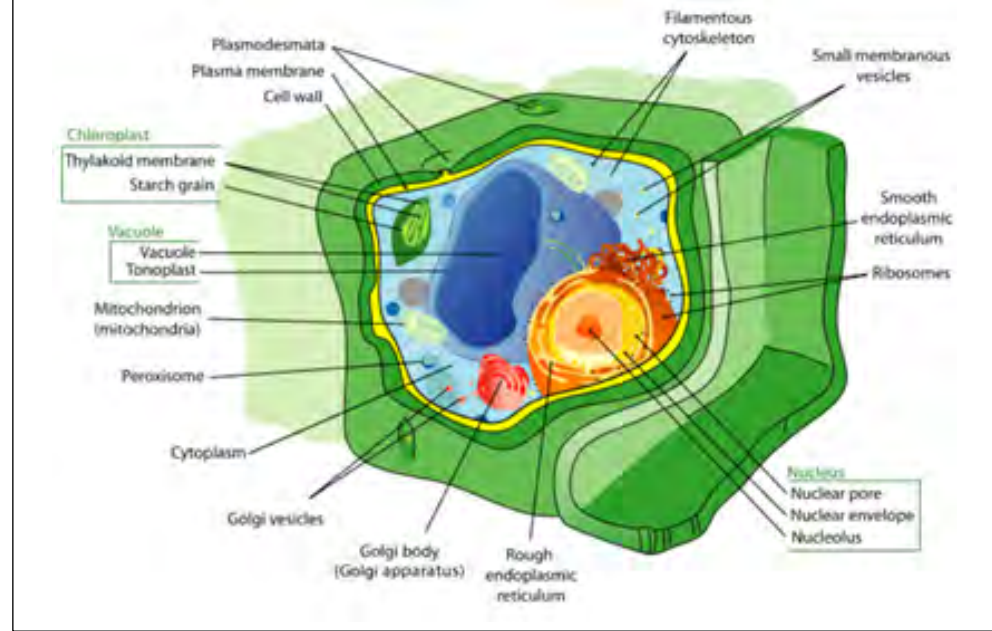
Fotoelettrochimica della Clorofilla



Eliotropismo



Geotropismo 1



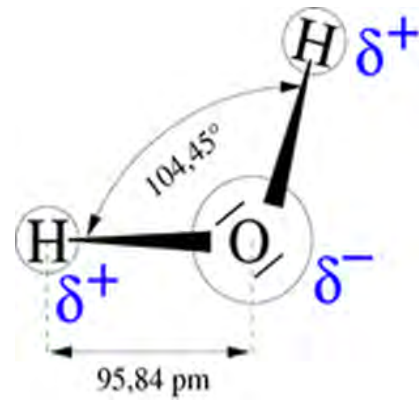
Geotropismo 2



QUARTA PARTE

Nozioni di elettrochimica di base

Molecola dell'acqua



Schema di bilancio di materia ed energia

