

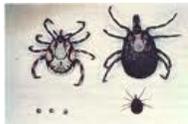
# MYCOPLASMA, RICKETTSIAS, CHLAMYDIAS, SPIROCHETES, VIBRIOS

rvsd 4 Jul93, 3 Aug94, 3 Aug 01, 28 Feb 02, 1 Aug 03, 15 Aug 07, 10 Aug 08, 5Aug09, 6Aug10, 23Aug11, 1Apr14, 23Nov15  
 TFC, 2nd, p 275-299, also Jensen & Wright, *Medical Microbiology*, TFC's 7<sup>th</sup>, pp 304-, 8<sup>th</sup>: 316-333, Bauman: 595- 618  
*Bergey's Manual of Systematic Bacteriology*, (1984) four volumes (See p. 756 for overview), Bauman 4<sup>th</sup>: ,607-627



## GRAM NEGATIVE BACTERIA, UNUSUAL BECAUSE OF MISC. CHARACTERISTICS

**MYCOPLASMAS:** no cell wall, cholesterol strengthens membrane. Penicillin resistant, pleomorphic  
*Mycoplasma pneumoniae* p 595 'walking pneumonia' 1° atypical pneumonia, hard to culture, tiny "fried egg" cols.



### OBLIGATE INTRACELLULAR PARASITES

**RICKETTSIAS** (etc): P 607

*R. rickettsia*: p 602: map Rocky Mountain Spotted Fever, by ticks. Damages lead to circ. collapse  
*Rickettsia prowazekii*: p epidemic typhus, poor hygiene, crowding, "louse-borne typhus"

**CHLAMYDIA** (life cycle: p 612) [military mantle: drapes around nucleus] reproduces inside vesicle in host cytoplasm.

**DIAGNOSIS:** inclusion bodies in infected cells.

*Chlamydia trachomatis*: p 613, 614 (rough tumor): most common STD, 1° cause of NGU in men  
 (mostly asymptomatic in ♀. Causes lymphogranuloma venerum. **most common cause of blindness**

*Chlamydia psittaci*: parrot fever, ornithosis, flu-like symptoms



**SPIROCHETES** (axial filament around which they are spiraled is characteristic feature) (p 616)

*Treponema pallidum* (turning thread) very fragile. P 617

**Stages of syphilis:** 1° p 30 days=chancre,  
 2° = 4 mo: rash

3° p4-30 yrs: gumma (tumor), neurosyphilis stages.

*T.p.* crosses placenta, Ab may not protect. Rate 2/10<sup>5</sup>

*Borrelia burgdorferi* **Lyme disease**, transm'n: deer tick  
 "target like" **erythema** (p 618-620)

*Borrelia recurrentis*, p 621 **relapsing fever**

spread by ticks or lice, poor hygiene, forest cabins:

fever, headache, myalgia (muscle pain). Fever recur 1-2 weeks. Napoleons troops 1812.

*Leptospira interrogans* (fine coil) zoonosis, infect kidneys, **excrete in urine:**  
 dog, cat, swine, rodents. Rodent control is best prevention



## DELTAPROTEOBACTERIA

### SULFUR REDUCING BACTERIA

*Desulfovibrio*: p 336 reduce S or SO<sub>4</sub> to produce H<sub>2</sub>S in mud and intestines... Corrodes iron pipes

**EPISILON: slender Gm- rods, helical or vibrioid. (microaerophilic)** (p 622)

**Vibrionaceae:** slightly curved, most non-pathogenic

*Vibrio cholerae*, p 623 asiatic cholera: cholera toxin increases GI perm, mucinase and endotoxin  
 intensely irritate mucous membrane, causes 'rice water' diarrhea. trans: **fecal-oral route** (monotrichous), can lose 20 quarts/day = 40 lbs...

*V. parahaemolyticus* gastroenteritis fr marine shellfish in sewage polluted waters, "explosive" diarrhea

*Campylobacter jejuni* (campylo- = curved) zoonotic enteritis: com cause of diarrhea, fever,  
 & *C. coli* severe abdominal pain, (bloody stool poss.) Proper sanitation prevents.

*Campylobacter fetus*: (curved rod) single polar flagellum, causes abortion in domestic animals

*Helicobacter pylori* **causes 80% of peptic ulcers** in humans (p 627) (lophotrichous)

Barry Marshall 1982, demonstrated it by dosing himself... Nobel prize.

*Fusobacterium* flora of gums, often in dental abscesses

