Ampicillin

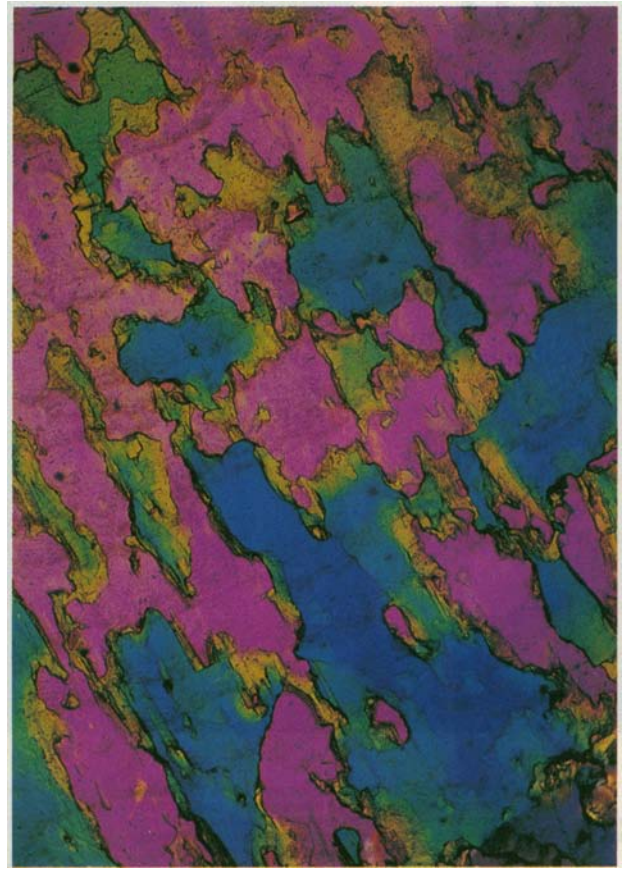

Illustration and text by Michael W. Davidson, Institute of Molecular Biophysics, Florida State University, Tallahassee

The chemotherapy of bacterial infections dates back to 1935 with the introduction of the sulfonamides. The evaluation of mortality statistics in England and Wales from that date onward indicates that these drugs had reduced the mortality rate from hemolytic streptoccal infections (typified by puerperal fever), pneumonia, and cerebrospinal fever. With the later introduction of bacterial-derived streptomycin, the mortality rate from tuberculosis began to decline. Today, physicians are armed with a wide spectrum of natural, semisynthetic, and synthetic chemical weapons to combat bacterial disease. The powerful antibiotic penicillin was discovered by Alexander Fleming in 1928, when he observed by chance that bacterial growth was inhibited by a contaminating mold (*Penicillium*). Ten years after its discovery, penicillin was isolated and characterized chemically by pathologist Howard Florey and biochemist Ernst Chain. Today, there are hundreds of derivatives of this important antibiotic. The photomicrograph above illustrates crystallites of the penicillin derivative ampicillin. This semisynthetic compound is currently in widespread use around the world to combat bacterial infections.