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Diffraction pattern, obtained with a He-Ne laser (λ = 0.633 μm), from intact skeletal muscle of frog. To detect the diffracted rays directly, an opaque screen was placed parallel to the incident laser beam. Generally, the diffracted rays are intercepted by a perpendicular screen, yielding the more familiar pattern of fringes. Six orders of diffraction are visible. This muscle has been stretched to sarcomere length 4.54 μm, at which length non-overlap of thick and thin filaments would be reproduced. See page 1280. [Alan Magid and Douglas J. Law, Duke University, Durham, North Carolina 27710]