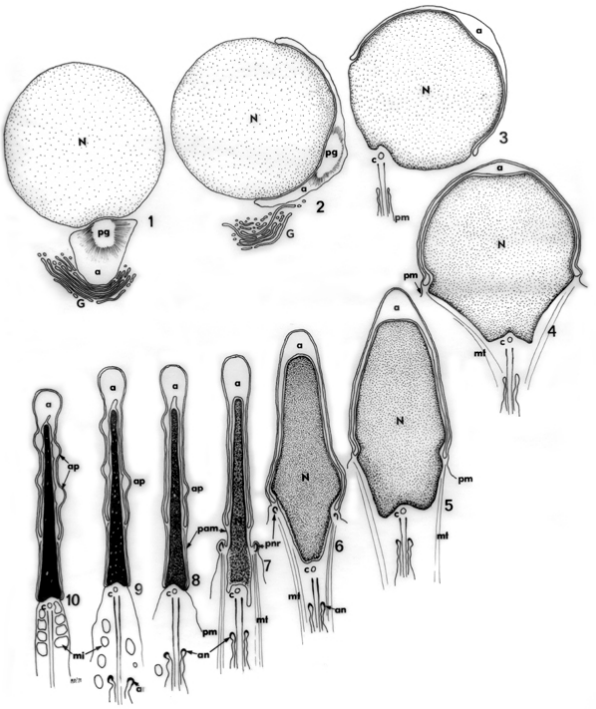
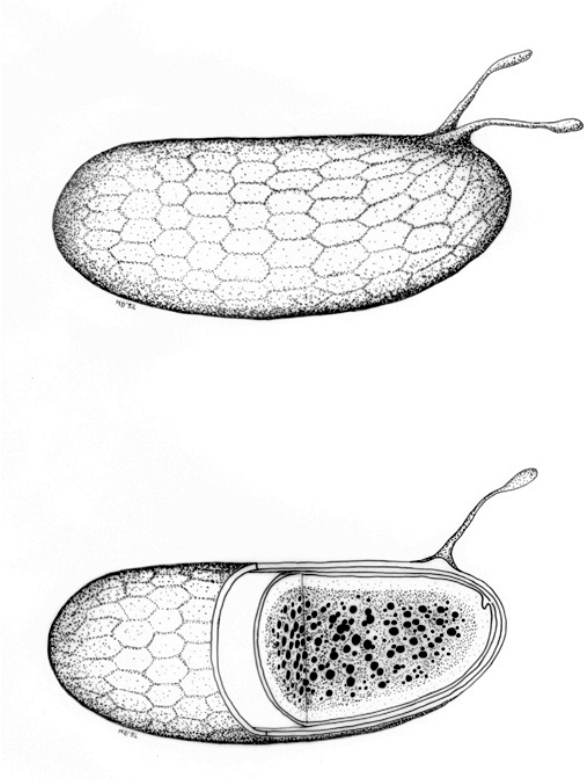
MEDICAL ILLUSTRATION

I have been producing illustrations since I was a sophomore in college. While in graduate school in Manhattan, I trained with Cliff Enright. During the mid 1980s I was a free lance medical illustrator specializing in cells and cellular structures.

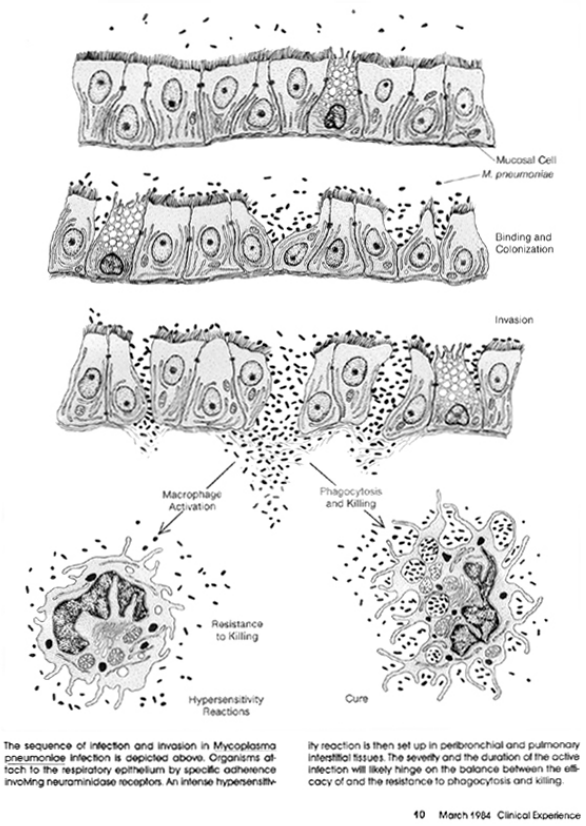


Free-hand ink drawing depicting the differentiation of a spermatid into a spermatozoon in a rodent (*O. degus*). Original rendition made from a collection of transmission electron micrographs of serial ultrathin sections of seminiferous tubules. Original: India ink on vellum, 10 x 12 inches. (© Miguel Berrios).



Free-hand ink drawing depicting *D. melanogaster* early embryos. Original rendition made from a collection of light and transmission electron micrographs of intact freshly laid specimens and ultrathin sections of fixed and embedded material. Reproduced from: M. Berrios' Doctoral Thesis. Original: India ink on vellum, 8 x 11 inches. (© The Rockefeller University).

Free-hand ink drawing depicting the invasion of pathogens *(M. pneumoniae*).
Reproduced from: Clinical Experience. Two color print. Original: India ink on vellum, 12 x 16 inches. (© HP Publications).



The sequence of infection and invasion in Mycoplasma pneumoniae infection is depicted above. Organisms attach to the respiratory epithelium by specific adherence involving neuraminidase receptors. An intense hypersensitivity reaction is then set up in peribronchial and pulmonary interstitial tissues. The severity and the duration of the active infection will likely hinge on the balance between the efficacy of and the resistance to phagocytosis and killing.

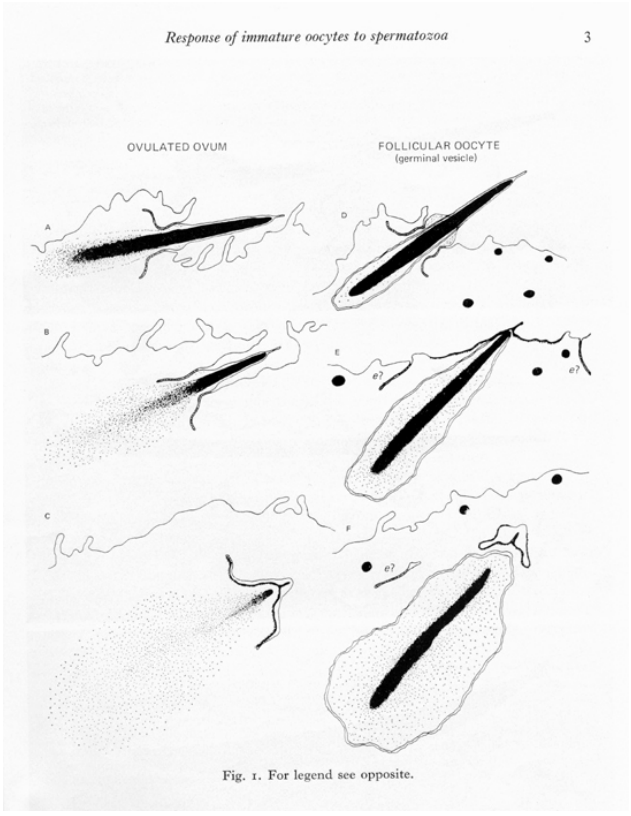
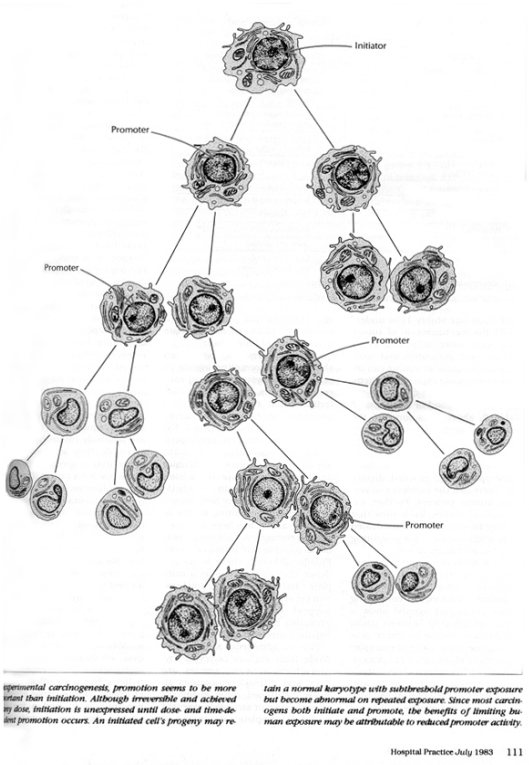


Fig. 1. For legend see opposite.

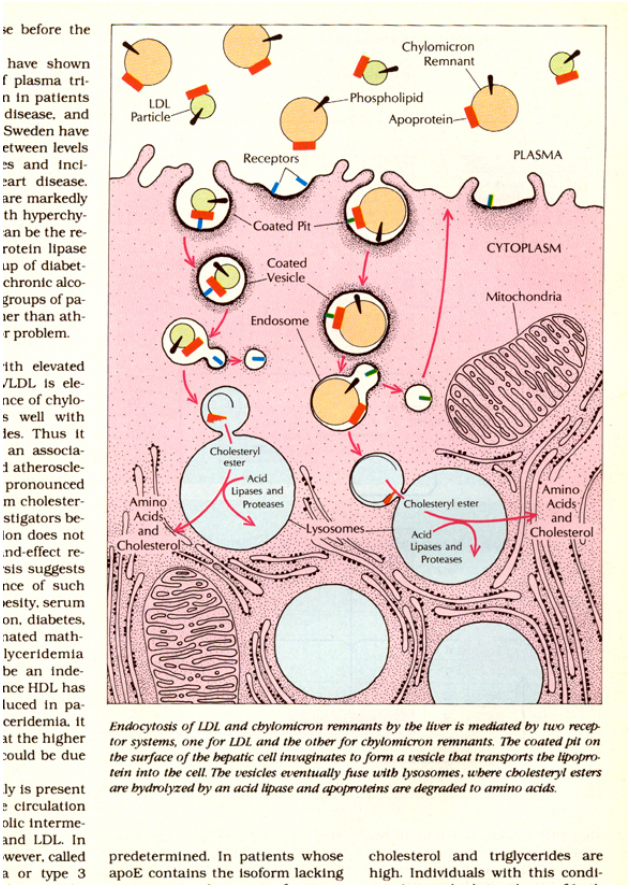
Free-hand ink drawing depicting fertilizing spermatozoa decondensing within the ooplasm of a mature (metaphase II) mammalian oocyte (left) and within the ooplasm of an inmature (primary oocyte) mammalian oocyte (right). Reproduced from: Oocyte Maturation: Aberrant Postfusion Responses of the Rabbit Primary Oocyte to Penetrating Spermatozoa by Miguel Berrios and J. Michael Bedford. *J. Cell Sci***.** 39, 1-12 (1979). Black and white print. Original: India ink on vellum, 8 x 11 inches. (© The Company of Biologists, Ltd).

Free-hand ink drawing depicting the initiation and promotion of carcinogenesis. Reproduced from: Chemicals and Cancer: Initiation and Promotion by Henry C. Pitot. Hospital Practice, July 1983. Original: India ink on vellum, 12 x 18 inches. (© HP Publications).



experimental carcinogenesis, promotion seems to be more ortant than initiation. Although irreversible and achieved ry dose, initiation is unexpressed until dose- and time-de- ent promotion occurs. An initiated cell's progeny may re-

tain a normal karyotype with subthreshold promoter exposure but become abnormal on repeated exposure. Since most carcinogens both initiate and promote, the benefits of limiting human exposure may be attributable to reduced promoter activity.



Endocytosis of LDL and chylomicron remnants by the liver is mediated by two receptor systems, one for LDL and the other for chylomicron remnants. The coated pit on the surface of the hepatic cell invaginates to form a vesicle that transports the lipoprotein into the cell. The vesicles eventually fuse with lysosomes, where cholesteryl esters are hydrolyzed by an acid lipase and apoproteins are degraded to amino acids.

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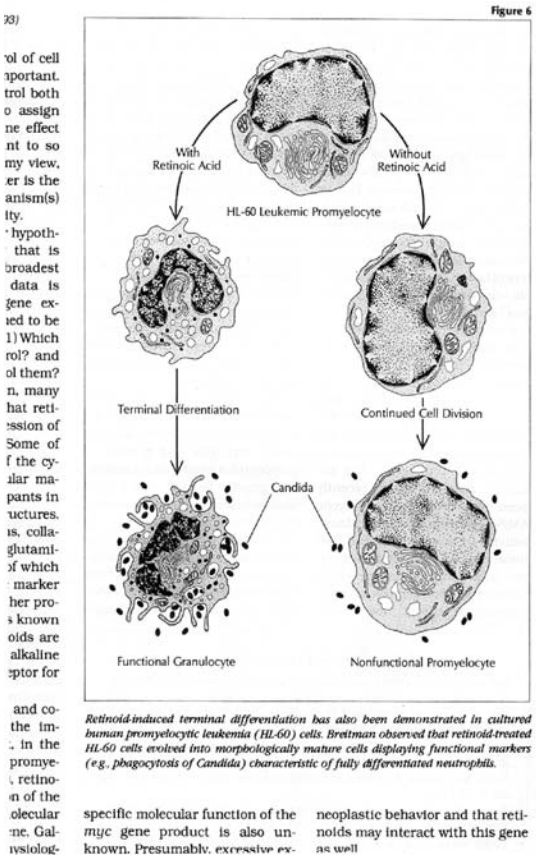
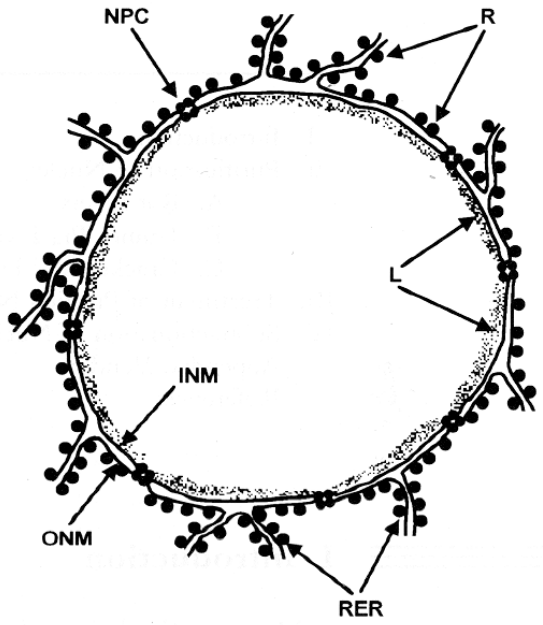
Free-hand ink drawing depicting the endocytosis of LDL and chylomicron remnants by an hepatocyte. Reproduced from: Lipoproteins and Coronary Artery Disease by Howard A. Eder. Hospital Practice, May 1983. Eight color print. Original: India ink on vellum, 10 x 14 inches. (© HP Publications).

Free-hand ink drawing depicting retinoid-induced differentiation of human promyelocytic leukemia (HL-60) cells. Reproduced from: Retinoids and Suppression of Carcinogenesis by Michael B. Sporn. Hospital Practice, October 1983. Four color print. Original: India ink on vellum, 10 x 16 inches. (© HP Publications).





Free-hand ink diagram depicting the nuclear envelope. Reproduced from: Isolation and Characterization of Karyoskeletal Protein-Enriched Fractions from Vertebrate Livers by Miguel Berrios. Methods in Cell Biology, Vol. 53. (M. Berrios, Ed.) 1987. Black and white print. Original: India ink on vellum, 4½ x 5 inches. (© Academic Press).