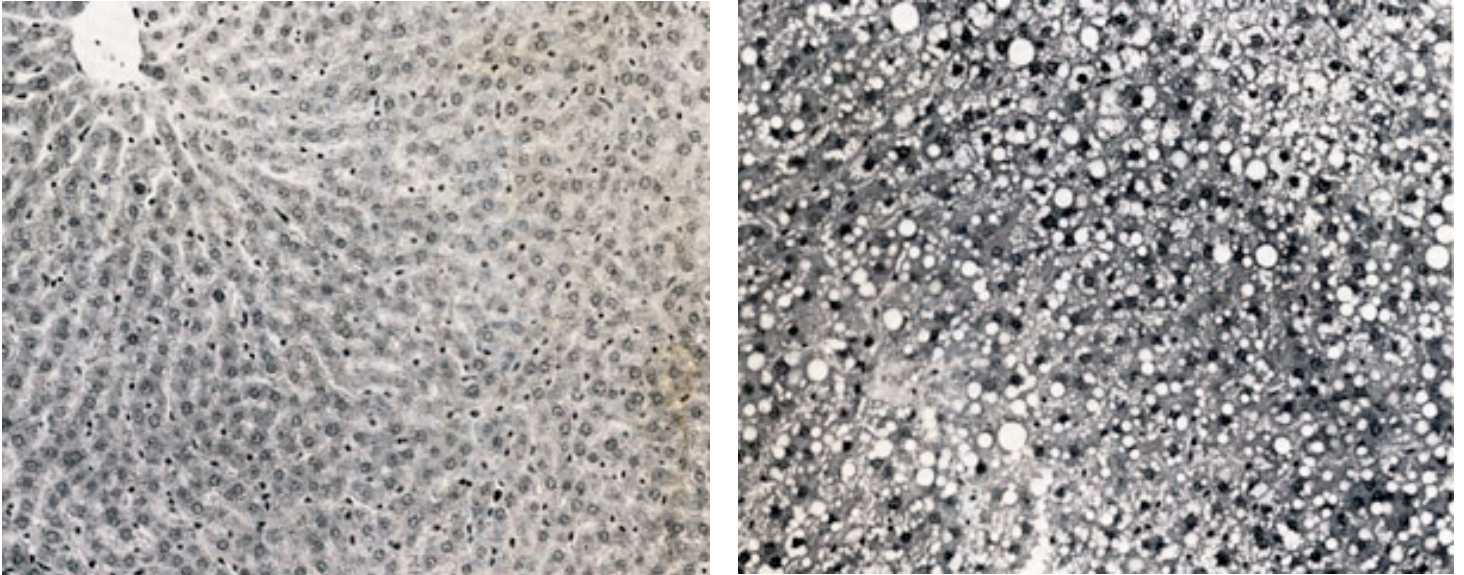
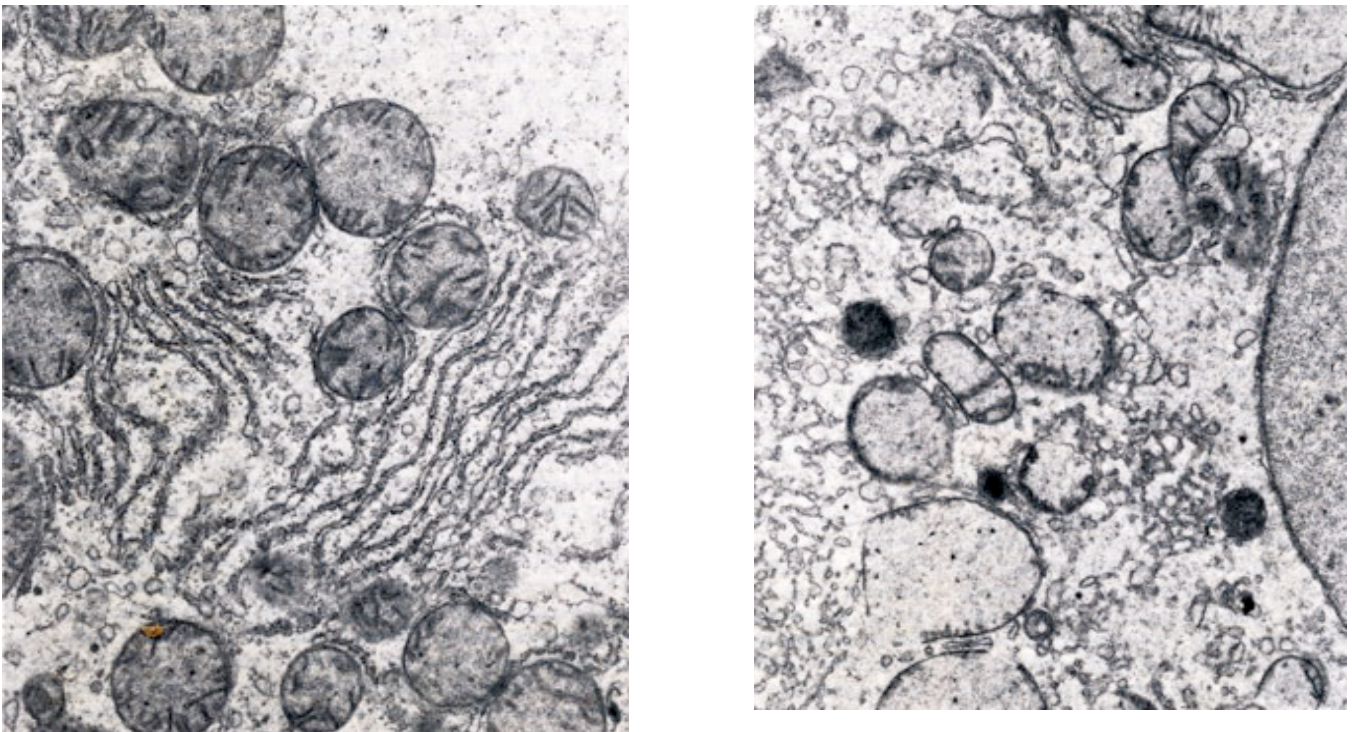


## Effects of Alcohol on the Liver Cells

Rats were separated into two groups: one group (control) was fed a normal diet; the other (experimental) was given a normal diet plus alcohol. Note the difference in the livers of the control and experimental groups.



FATTY LIVER was produced in laboratory rats by alcohol in spite of an adequate diet. Liver-tissue sections from two rats are enlarged 240 diameters in these photomicrographs. One rat (left) was fed a liquid diet without alcohol. The other (right) had a liquid diet containing ethanol as 36 percent of total calories. After 24 hours the micrograph of the ethanol-fed rat's liver shows numerous globular fat droplets.



MICROSTRUCTURAL CHANGES are revealed in electron micrographs in which part of the liver cell is enlarged 16,000 diameters. In the control liver (left) the gray organelles with infolding membranes (cristae) are normal mitochondria; between them the parallel arrays of ribosome-studded rough endoplasmic reticulum are seen, along with some vesicular (sac-shaped) smooth endoplasmic reticulum. In the liver of the ethanol-fed rat (right) the mitochondria are swollen and distorted; in some mitochondria the external membrane and cristae are disrupted. There is marked proliferation of the smooth endoplasmic reticulum.

