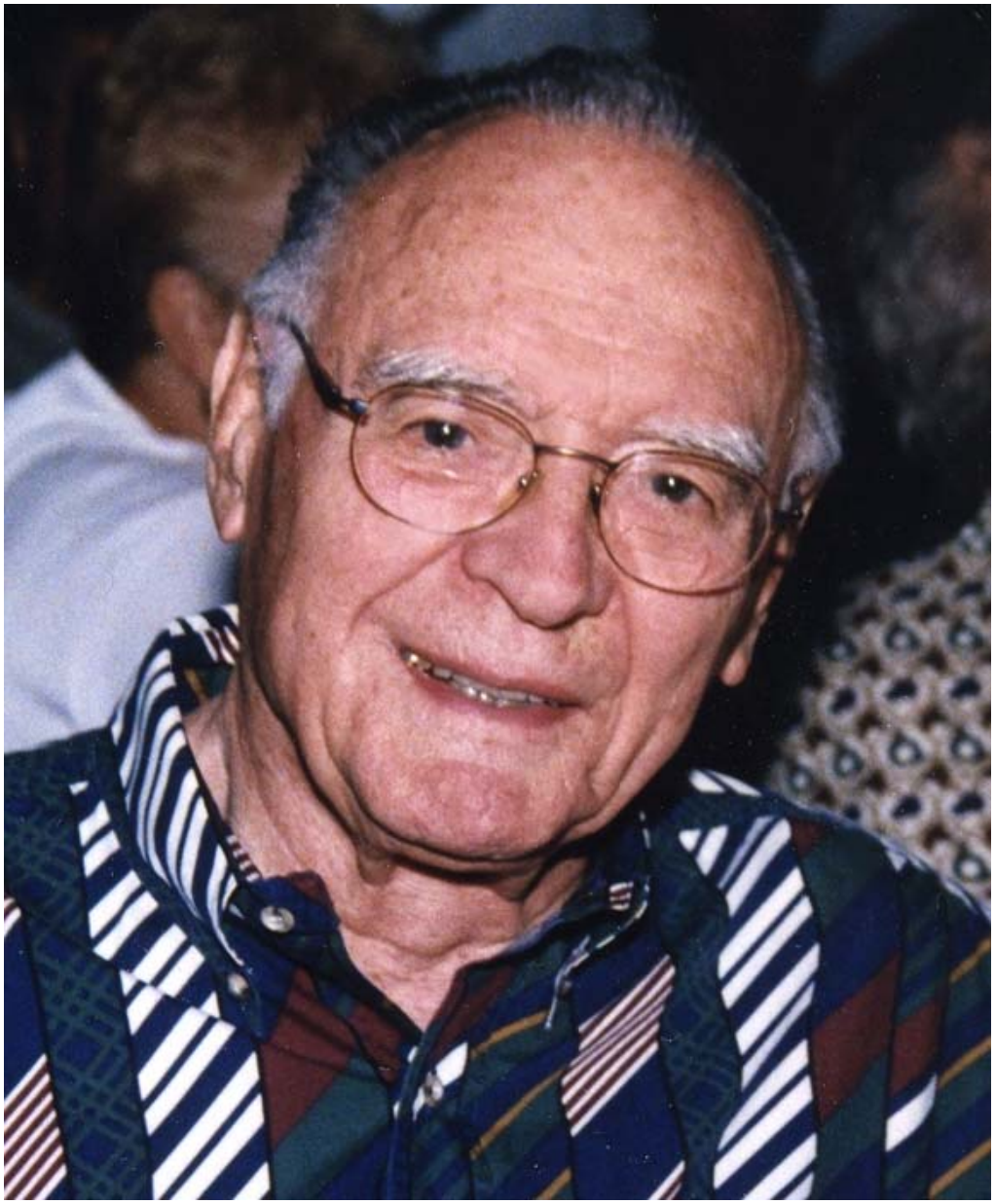
Harrison Latta
1918-2007

By Arthur Cohen



Harrison Latta

Beverly Hills High School 1936

UCLA - AB Chemistry 1940

Johns Hopkins Univ - MD 1943

Johns Hopkins Hospital - Pathology Residency 1944-46

AFIP 1946-48

Harvard Medical School - Research fellow 1948-49

MIT - Research Associate 1949-51

Western Reserve Univ - Assist Professor of Pathology 1951-54

UCLA – Assoc Professor – Professor 1954-88, Professor Emeritus 1988-

INTERESTS

Electron microscopy
- technical aspects
- morphologic aspects

Diseases
- lung
- congenital heart
- kidney

Harrison Latta's impact on renal pathology, diagnostic aspects of diseases of kidneys and other organs and, therefore, on us, members of the Renal Pathology Society.

This is related to his *interests* as earlier indicated. This is *not related* to his diagnostic skills in human renal pathology.

Robertson (1989) reminisced on Latta's introduction of glass knifes: "I remember clearly one Monday morning that Harrison came into the lab with a milk bottle from home and stated that he was going to make a glass knife. We all laughed at this strange idea, but I followed him up to the machine shop where he got a hammer and smashed the milk bottle and chose a small piece to use as a knife. He mounted a fragment on a dummy steel knife using a black glue, and he and Frank Hartmann proceeded to cut very thin sections that one could use without taking out the plastic. I believe this was the first time anybody had succeeded in getting high-quality sections of biological material routinely thin enough to use for direct study without removing the plastic" (p. 139). Pease added more flavor to the early investigation of knives: "it is amusing to recall the mystique that soon developed in defining and finding the 'perfect' stain-free glass that would make ideal fracture edges. The idea developed that very old glass was apt to be better than new glass (I had a prized piece of broken, heavy, plate glass salvaged from a pre-prohibition bar widow, still with some old gold lettering on it)" (1987, p. 51).

Bechtel W. Discovering Cell Mechanisms: The Creation of Modern Cell Biology

Use of a Glass Edge in Thin Sectioning for Electron Microscopy.* (17931)

HARRISON LATTA† AND J. FRANCIS HARTMANN‡

From the Department of Biology, Massachusetts Institute of Technology, Cambridge, Mass.

The use of a steel microtome knife in cutting sections for electron microscopy has certain disadvantages, especially in the achievement and maintenance of a sufficiently sharp edge, which involve a considerable expenditure of time. The search for a knife material having homogeneity and hardness without excessive brittleness led to the development of a glass cutting edge. With it, we have been able to cut thin sections more consistently, easily, and rapidly than with steel microtome knives. Since the glass "knives" are obtained simply by breaking them from a strip of glass, the tedious and uncertain sharpening procedures necessary with steel knives are eliminated. Inspection with the tissue after it has been cut with the glass edge. The glass knives are also quite inexpensive. The knives are made by breaking a strip 1½″ wide and about 12″ long from a sheet of plate glass approximately 3/8″ thick. Since the edges thus produced will form clearance facets, this fracture should be as smooth and straight as possible. A series of straight parallel scorings at 45° to the long axis are then made on each strip, 1″ apart, and on the opposite surface from the first scoring. The parallelograms thus outlined are broken off, producing a set of glass blocks, each of which has two cutting edges 3/8″ long, formed by faces meeting at a 45° angle (Fig. 1,A). Any competent glass

Proc Soc Exp Biol Med 74:436-9,1950

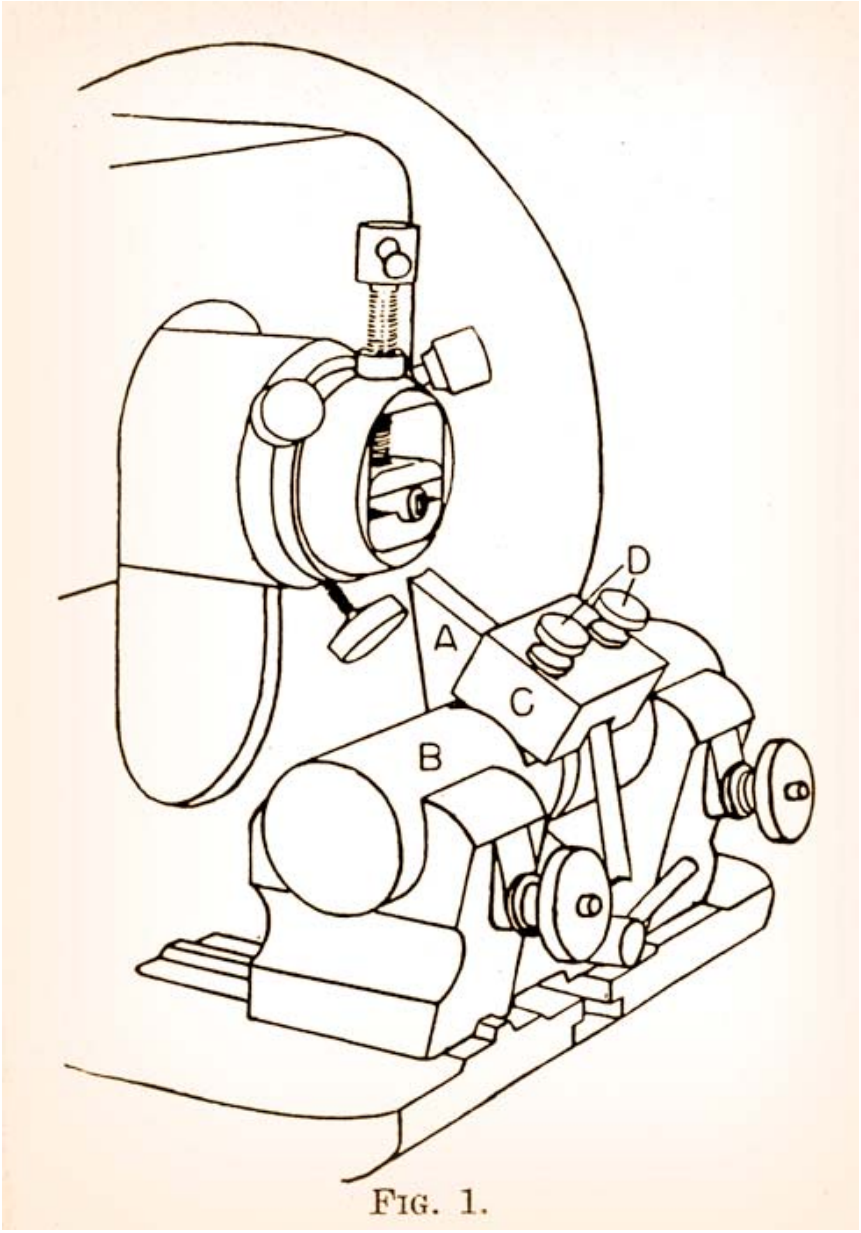


FIG. 1.

1950 The Renal Biopsy Era - Nephrology and Nephropathology are Born

1950-1953:Drs. H. Latta, JF Hartmann, K.R. Porter and J Blum, DC Pease, GE Palade, and VE Cosslett introduce transmission electron microscopy to the study of human disease. One of the very first (if not first) uses of TEM was the study of the human renal tissues in "lipoid nephrosis" (aka minimal change nephrotic syndrome) (there was only "fusion" of foot processes)...

1950 Coon and Kaplan 1st developed the fluorescent labeled antibody for use in tissue...

1950 Latta and Hartmann use a glass edge in thin sectioning for electron microscopy, Proc Soc Exp Biol Med 74: 436, 1950...

***1950* "*Medical Diseases of the Kidney*" was published by JFK McManus.**

RPS Renal pathology history - Bonsib and Silva 2007

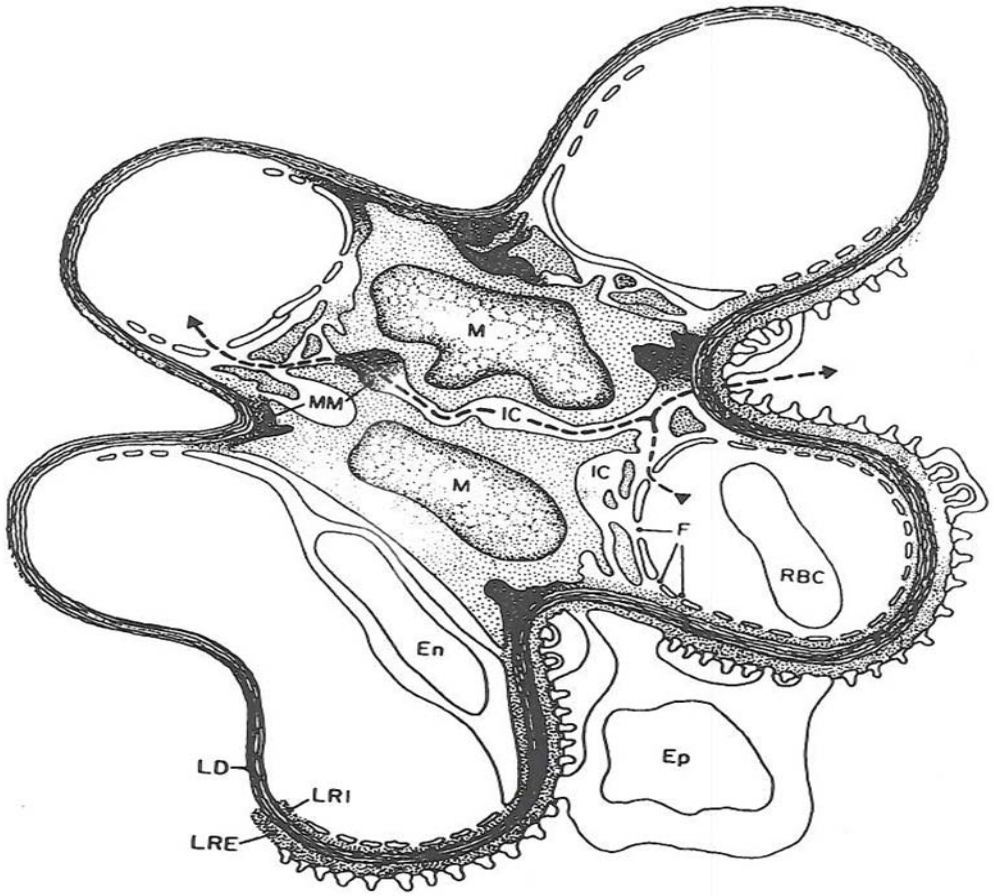


Figure 1. Diagram of the mesangial region. The mesangium is shown at the center of capillaries forming a glomerular lobul
Portions of the mesangium are covered by the lamina densa (LD) and lamina rara externa (LRE), which follow the fo
processes of the epithelium (Ep) from the peripheral glomerular capillary wall over the mesangium. The capillary baseme
membrane (BM) (basal lamina) is composed of the LRE, the LD, and the lamina rara interna (LRI). Where it joins th
mesangium, the LRI is continuous with the mesangial matrix (MM). The MM varies in density and is irregularly distributed
the mesangium. It is often more dense where it anchors processes of mesangial cells (M) to the LD of the infolded BM. Th
MM is usually less dense beneath central portions of endothelial cells (En) lying over the mesangium. Endothelial cells d
not normally have a separate basement membrane. The central portions of endothelial cells often have fenestrations (
that are similar in size to but fewer in number than fenestrations in the peripheral capillary wall. The fenestrations allow bloo
plasma and particulate tracers to directly enter into the mesangium and move in intercellular channels (IC) where there
little or no matrix. One pathway of flow out of the mesangium seems to be through the LD and between foot processes ov
the mesangium, contributing to the glomerular filtrate (arrow to the right). A second pathway of flow out of the mesangiu
seems to be through the intercellular channels and endothelial fenestrations of efferent capillaries into their lumens (arro
to the left). A third but small pathway of flow seems to be through the hilus into the polar cushion (Polkissen) of the JG
Adjacent foot processes come from different cells, hence the number covered by epithelial cytoplasm is always od

Latta et al The centrolobular region of the renal glomerulus studied by electron microscopy. J Ultrastruct Res 4:455, 1960

The Juxtaglomerular Apparatus as Studied Electron Microscopically[1]

HARRISON LATTA and ARVID B. MAUNSBACH[2]
with the technical collaboration of MARGERY L. COOK

Department of Pathology, University of California Medical Center, Los Angeles 24, California, and Institut de Recherches Scientifiques sur le Cancer, Villejuif (Seine), France

Received September 5, 1961

The juxtaglomerular apparatus of the rat kidney has been studied electron microscopically. Three parts and their intimate relationships are described in some detail: (1) the macula densa of the distal convoluted tubule, (2) the granular epithelioid cells, commonly found in the wall of the afferent arteriole, and (3) the cells of the "lacis" of Oberling and Hatt, or the pseudo-meissnerian cells of Goormaghtigh.

The cells of the macula densa vary in fine structure from other cells of the distal convoluted tubule, and lying close under them are processes of both granular and lacis cells. Granular cells may contain, besides two or more types of granules, fibrillar bundles resembling those of smooth muscle. Lacis cells may lie beneath the endothelium of the afferent arteriole. Their cytoplasm usually contains prominent membrane systems, and may have granules and fibrillar bundles like those of granular cells. The evidence suggests that lacis cells are related to granular cells and that both may be derived from smooth muscle.

Functional implications of these observations are discussed.

Relations of the Centrolobular Region of the Glomerulus to the Juxtaglomerular Apparatus[1]

HARRISON LATTA and ARVID B. MAUNSBACH[2]
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Received September 5, 1961

Intercapillary or mesangial cells in the centrolobular region of renal glomeruli of rats are similar to and continuous with "lacis" (pseudo-meissnerian) cells of the juxtaglomerular apparatus. They have electron microscopic features which also relate them to the granular epithelioid cells of the juxtaglomerular apparatus and to smooth muscle cells. Their structural features and functions help to differentiate them from adjacent endothelial cells.

Intercapillary cells are bathed by a rapid flow of blood plasma through the centrolobular region. They are actively phagocytic and associated with the PAS-positive intercellular substance in normal glomeruli and its increase in disease, with occasional bundles of collagen in the normal glomerulus, and with the formation of collagen in some glomerular diseases in animals and human beings.

Intercapillary cells seem to have various mechanisms with which they could supplement the juxtaglomerular apparatus in altering the amount or composition of the urine.

Following these observations….

Barajas L and Latta H. A three dimensional study of the juxtaglomerular apparatus in the rat. Light and electron microscopic observations.
Lab Invest 12:257-69, 1963

Barajas L and Latta H. Structure of the juxtaglomerular apparatus.
Circ Res 21:Suppl 2:15-28, 1967

BUT….

Latta H. Electron microscopy. Psychiatr Res Rep Am Psychiatr Assoc 30:102-108,1956

March 7, 1978 The Organizing Committee met in Atlanta. Jay Bernstein and Robert Lannigan were included as new members of the committee. Fred Silva served as secretary. “I can’t remember if any of us were thinking of ourselves as “Founding” anything. We just wanted to get together to talk about, and learn about, what we loved and were excited about (F.Silva)”. A Medline Search of publications by these ‘Founding Members’ of the RPC identified -66 publications appeared in print in the year 1977. The Steering Committee created a list of potential new members to invite to join the society. These Charter Members included:

Giuseppe Andres	**Curtis Wilson**
Gloria Gallo	**Tatiana Antonovych**
Harrison Latta	**Arthur Cohen**
Gary Hill	**Morris Karnovsky**
Tito Cavallo	**Alfred Michael**
Craig Tisher	**Victor Pollak**
John Hoyer	**Keith Holly**
James McAdams	**Victoriano Pardo**
Ralph McCoy	**Seymour Rosen**

Harrison Latta died at Cedars-Sinai Medical Center on December 27, 2007 of high grade urothelial carcinoma of the bladder with widespread metastases. He also died with amyloidosis affecting heart and other organs, including the kidneys.