kidneys of mammals is impressive, e.g., in humans, the total blood volume of about 5 liters filters through the glomerulus approximately every 40 minutes. The end product of the filtration, reabsorption and secretion of the nephron is urine. In humans, in spite of the large volume of filtrate, 180 liters, resulting during a 24 hour period, only about 1 liter of urine is eliminated.

The kidneys are paired, retroperitoneal ("behind" the parietal peritoneum), organs that are surrounded by fat deposits in the dorsal portion of the lumbar region. Notice that the position of the right **kidney** is slightly more caudal than the left due to the posterior extension of the caudate lobe of the liver on the right side. Take note of the hepato-renal ligament extending between the caudate lobe and the right kidney. It has no counterpart on the left side, therefore be careful to conserve this membranous structure [Figure 3–8 and Figure 6–1].

In order to observe the gross internal anatomy of the kidney, make a slit through the parietal peritoneum on the *left* side. Carefully separate the *left* kidney from the surrounding fat, taking care to expose it sufficiently to allow you to make a mid-frontal cut through the kidney. In life the kidney resembles a large kidney bean in color and in shape. The medial indentation is the **hilus** [Figure 6–1]. Through this region passes the expanded proximal end of the ureter, the renal pelvis, renal arteries and veins, and nerves. Notice the tough, whitish, fibrous connective tissue encapsulating the kidney, the **renal capsule**. To better view this capsule, carefully peel it back, without removing it [Figure 6–2]. The outer narrow band of lighter tissue in the section is the granular **cortex**. The central darker region is the striated **medulla**. The glomerulus and portions of the nephron tubule are found in the cortex while other tubular regions of the nephron as well as collecting ducts are found in the medulla.

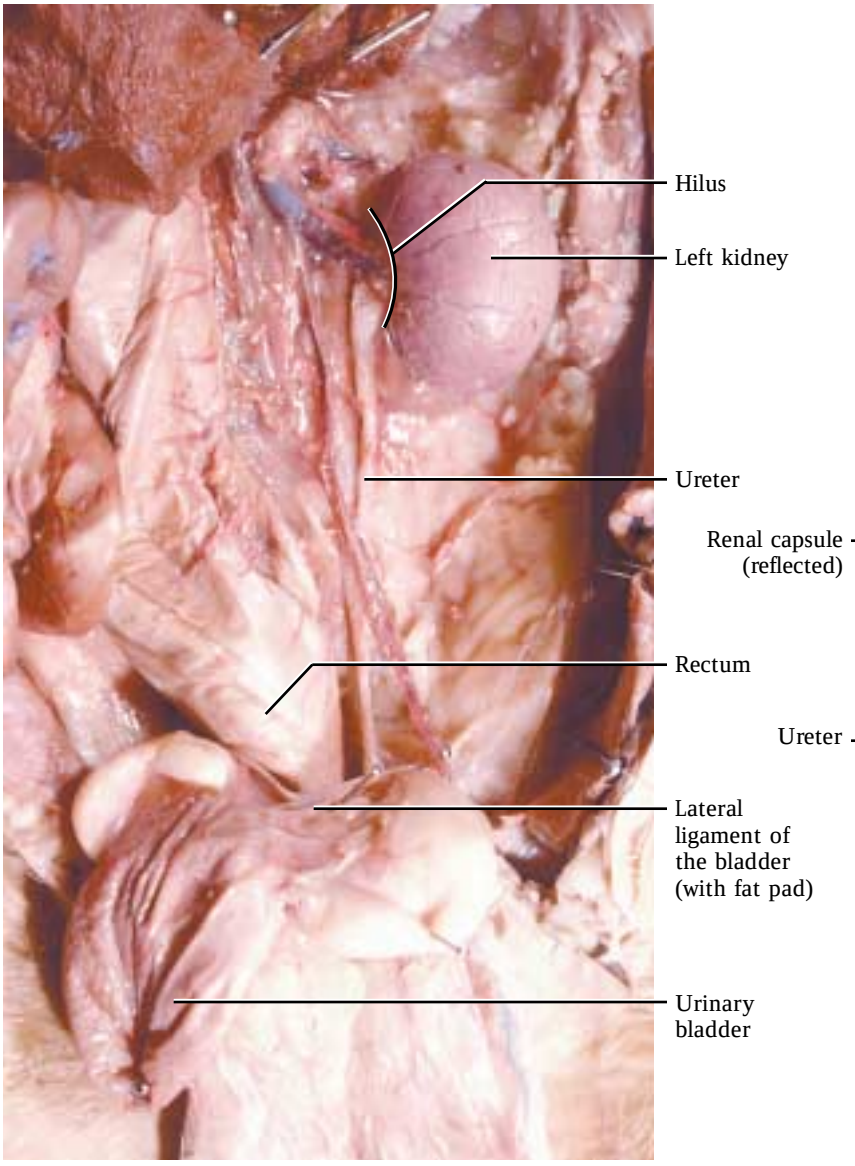

FIGURE 6–1 Overview of excretory system.

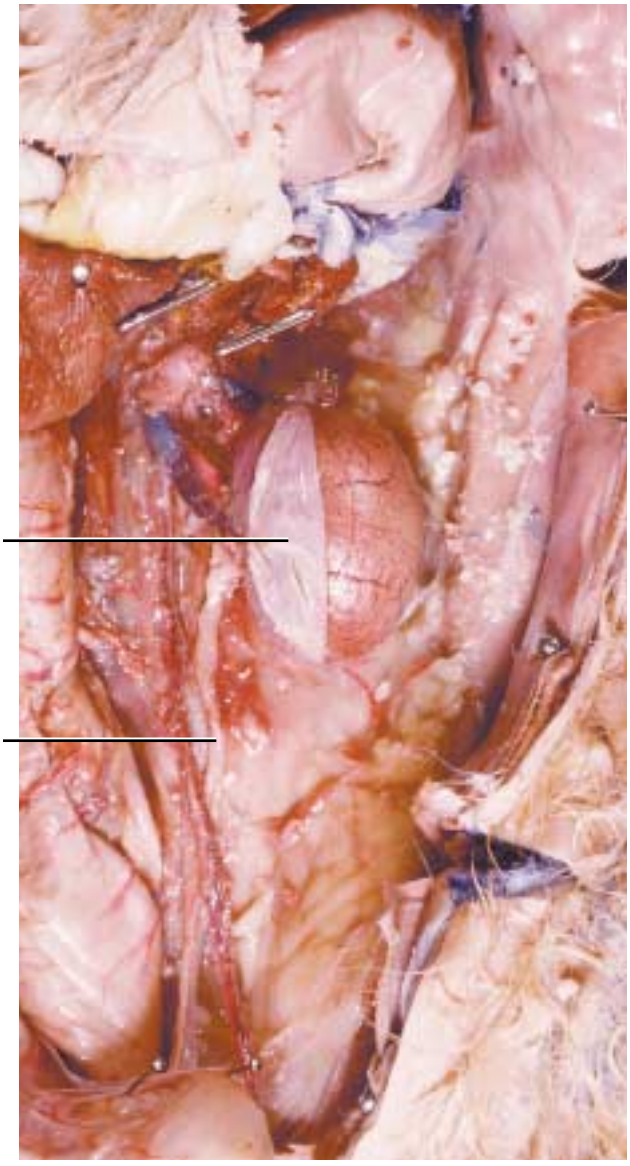

FIGURE 6–2 Renal capsule.