

# Health Committee

## Renal Disease

The case study of the four year old greyhound bitch continues with a look at her laboratory studies, starting the day after Westminster until her death in April. It is interesting to note the effect of kidney failure on: her ability to produce red cells, the inability to maintain electrolyte balance, and impaired calcium and phosphorous metabolism leading to severe adjustments by the parathyroid gland and the skeletal system.

An indicator of just how poorly her kidneys were functioning can be traced through her blood urea nitrogen (BUN) and her creatinine. Urea is the by-product of protein metabolism and 90% is normally excreted through the kidney. The reference range for urea is 5-20 mg/dl depending on the diet. Creatinine is a by-product of muscle breakdown and is sent to the blood at a relatively constant rate. It is continuously excreted by the kidney by glomerular filtration. Normal values for creatinine are 0.2 - 1.5 mg/dl.

Potassium levels become elevated because of the release of potassium from the tissues which are becoming toxified and breaking down. Sodium is decreased or diluted out because of the retention of water. Anemia is the result of a suppression of the bone marrow. A non-functioning bone marrow could eventually lead to decreases in white cells then infection and a decrease in platelets or platelet dysfunction which would cause bleeding.

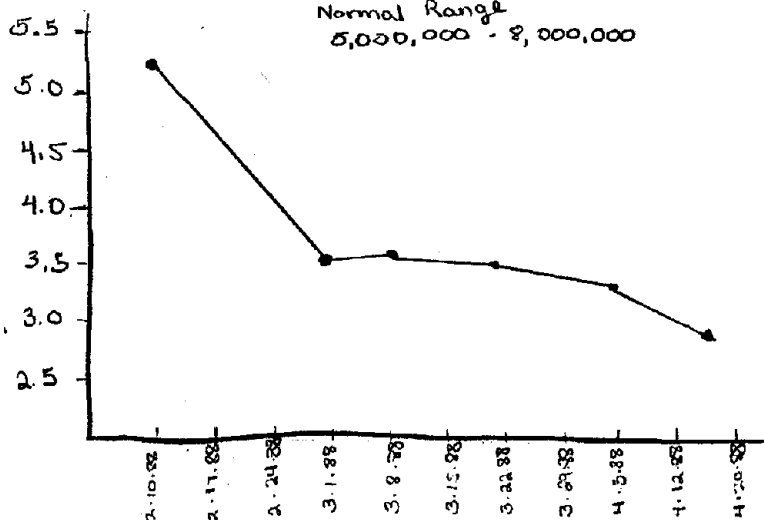
It is clear from the results obtained at the first visit to the veterinarian that this dog was already in end-stage renal failure. This means that the filtering system in the kidney was more than 90% destroyed and the slides and the electron microscopic pictures confirmed this at autopsy. The conclusions of the University of Pennsylvania drawn from this case will be in the next issue.

RBC's  $\times 10^6$

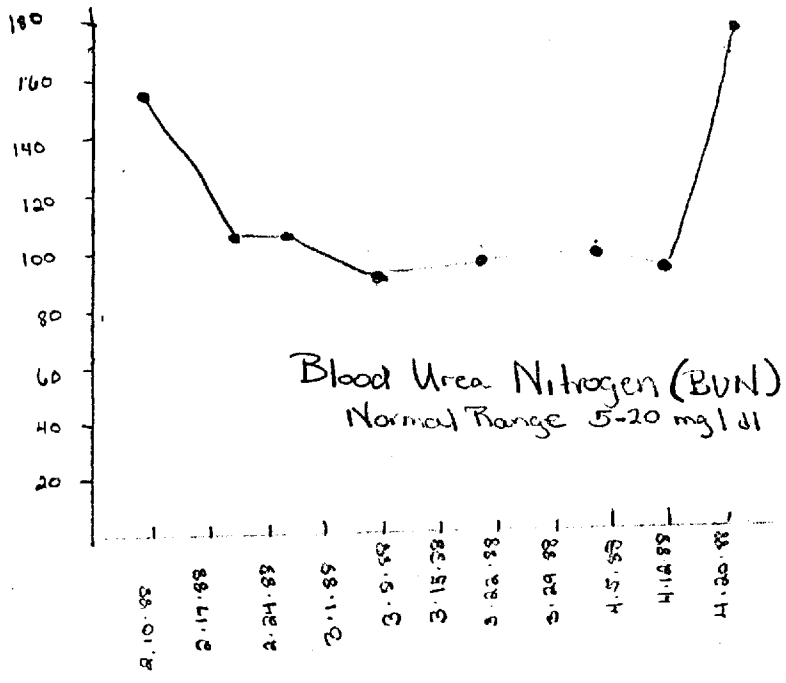
RBC COUNT

Normal Range

5,000,000 - 8,000,000



mg/dl



mg/dl

