

a week, but that the patient may in most instances be roused at any time.

In four cases a urinous odor of the breath was noticeable and in one of these the skin also had a urinous odor. In one instance the breath is described as having an ammoniacal character. In one patient, not included in the collection, the suppression lasted four days and the skin of the neck and face was covered by crystals of urea. An important clinical feature of obstructive uræmia is that the temperature is seldom elevated. In only one case is there a record of any fever, and in this the rise was slight. It is clearly the rule for the temperature to remain normal throughout or to be a little subnormal during the last days of life.

On comparing the symptoms of these two sets of cases, the human obstructive uræmia and the experimental uræmia following double nephrectomy or bilateral ligation of the ureters, several important resemblances become apparent. Thus vomiting is an early and frequent symptom, while diarrhoea, though not rare, is distinctively less common. In both groups of cases marked muscular prostration is usual from the beginning. Occasionally, however, there is early restlessness. Indications of delirium are absent in the experimental as in the human cases and paralyses have not been observed. In the terminal stage, fibrillary tremors are common in both the human and the canine cases, while general convulsions are exceptional. Terminal coma may occur in either group, but consciousness can usually be aroused at any time. An important clinical resemblance lies in the fact that the temperature is either normal throughout or slightly subnormal. There are, however, some points of difference. Thus, a patient with both ureters obstructed may live more than two weeks, while a dog with both ureters tied or with both kidneys extirpated lives less than one week. We can hardly attribute this difference in the duration of life to the shock of operation. It may depend on the activity of the skin in man. The ammoniacal breath of human patients depends doubtless on the decomposition of urea in the gastro-enteric tract and the odor of the skin arises from the decomposition of urea in the sweat. It may happen that a greater accumulation of urea occurs in the blood in man than in the dog, owing to his longer survival, and that this occasions the excretion of urea by the gut in the case of man. Notwithstanding these clinical differences, it seems probable that the pathological conditions which are responsible for the symptoms in nephrectomized dogs are essentially those that are responsible for the symptoms of obstructive uræmia—namely, the accumulation in the blood of urea, extractives, inorganic salts, and