There are pre-glycosuric indications which should not be disregarded. Then there are attacks of transient glycosuria which should always be regarded with suspicion, for there are cases on record in which diabetes mellitus has developed even months and years after the appearance of a transient glycosuria. Until the lay mind is educated to the point of appreciating the true relation of the physician to the family, namely, that of conservator and supervisor, we shall not be able to make ourselves very useful in such disorders as diabetes mellitus in young children.

ALBUMINURIA IN DISEASE OF THE KIDNEY IN INFANCY AND CHILDHOOD.*

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Diseases of the kidney in infancy and childhood are not so varied as in adults. They are chiefly active hyperemia and nephritis following the contagious diseases, especially scarlet fever. The acquired diseases of the kidney in childhood show considerable difference from adults, because acute affections, common to childhood, causing diseases of this organ, are seldom met with in after life. Under 15 years of age there is less likelihood to disorders of circulation than in later periods, and consequently under this age they are less likely to have chronic lesions of the kidneys.

Again, a child's kidney rapidly recovers from an injury. It is very rare to find a case of pyelonephritis, or hydronephrosis in children. But cachectic conditions lead to amyloid infiltration and this, in turn, to chronic albuminuria in children as well as in adults. Physiological albuminuria may occur at any period of infancy or childhood, but it is the most common between the ages of 5 and 15. The albumin is rarely present in the urine passed in the morning immediately on rising. Albumin alone being present, with an absence of blood corpuscles or other abnormal elements, indicates an absence of pathological changes.

While albumin in the urine does not, of necessity, indicate serious organic disturbances in the kidney, neither does it necessarily render the prognosis of a grave character, yet its presence, however slight, commands the utmost watchfulness and care before a decision is reached as to its being of no clinical significance. Albuminuria is the escape of serum-albumin and serum-globulin from the blood vessels into the renal tubes, and this escape of albumin indicates slight or grave nutritional disturbances. One is scarcely able, however, to certainly locate the site of these disturbances. For in each kidney it is estimated that there are about fifteen miles of tubing. This tubing is lined with basement membrane covered by epithelial cells of a variety of shapes and sizes. It is probable that the very shapes and sizes of the cells are accounted for, not by any peculiar function they each possess, but by the fact that they fill in the lumen of a tube that takes on the form, in quirk and curl, of almost every geometrical figure, from the capsule of Bowman to the excretory duct of Bellini. Yet it is thought that the columnar cells of the tubes of Henle select the urea, though this has not yet been certainly proved. While the tests for albumin and the use of the microscope will show disturb-

ances, somewhere along the tubal track, yet nothing will appear that absolutely locates the lesion.

CAUSES OF ACUTE AND CHRONIC NEPHRITIS.

The scheme given here has been of much use to myself in locating the first appearance of the trouble and in giving the causes. It seems to me that it covers the whole field, as follows: The nutritional disturbances lie in the epithelium lining of the glomeruli, the tufts of capillaries, and the uriniferous tubules.

1. Renal Congestion.—Active: chronic liver, heart, pregnancy; passive: tumors.

2. Definite Lesions of Kidney.—Toxemia, scarlet fever, gout, amyloid and fatty degeneration, renal supuration, renal tumors.

3. Indefinite Causes.—Scurvy, syphilis, medicinal poisoning, kidney, pregnancy of, epilepsy, tetanus, injuries to head, apoplexy, exophthalmic goiter.

4. Accidentals.—Pus: cystitis, pyelitis, urethritis; blood: pelvis, ureters, bladder.

5. Febrile.—Typhoid fever, smallpox, yellow fever, diphtheria, scarlet fever.

6. No Definite Lesions.—Functional, dietetic, intermittent, cyclic.

Albumin is found in the urine after a rich meal, heavy muscular exertion, intense emotion, or cold bathing. The cyclic variety bears upon life insurance. However, when every other constituent of the urine is normal, the case under careful management ordinarily recovers and the life insurance people sometimes accept the risk. I care not how little stress may be laid on the so-called functional albuminuria, the cyclic variety, or what not, undoubtedly some changes, though apparently trifling, do take place in the kidney somewhere. Fortunately, however, for the patient, these changes are non-progressive. But sooner or later, it may be after months or years have passed, grave lesions will show themselves, and insidious degeneration has been going on in the meantime. So for no other reason than that a certain relief may come to the mind of the physician, it becomes a necessity for him to determine, by differential diagnosis, whether he is dealing with a case of renal albuminuria or functional albuminuria.

I desire to report the case of a child, where the cause of the disease is somewhat uncertain. Early in March, I was called in consultation to see a little boy 4 years old, who in development would ordinarily be taken to be 7. He had a very large head, large body and large limbs. At the age of 12 months, I was told, he weighed forty pounds. The history of the boy is that he was never sick until the beginning of this illness. He never had the diseases common to children, such as scarlet fever, measles, whooping cough, etc. The preceding Christmas time, he seemed to be indisposed and it was observed that his eyes and face and lower extremities were edematous. A physician was called and treated him for a few days, when the child apparently recovered. Two or three weeks later he became sick again, with the same symptoms. An examination of the urine showed the presence of a large quantity of albumin.

When I saw the patient, the albumin was about two-thirds of the bulk of the urine. The specific gravity was 1040, the color dark, and the amount plentiful. The temperature was normal, eyes almost closed from the swelling, the face also very much enlarged, and the feet, ankles and lower extremities very edematous. The abdominal cavity was ascitic, the hands and arms were swollen, while the pulse was fair but showed consider-

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able arterial tension. There was considerable loss of strength, and a great loss of red blood. In fact there was present the condition known as the "alabaster cachexia."

The diet in this case was nothing but sweet milk as long as he could take it, but after awhile his repugnance to milk became so great that he could scarcely swallow it. Then some stale bread was put in the milk, and he was also allowed some fruits in the form of oranges and lemonade. In some types of albuminuria, white meats may be given, namely, fish, chicken, turkey, sweetbread, birds, etc. In the way of vegetables, spinach, oyster plant, parsnips, etc., may be allowed. In the way of fruits, stewed apples, prunes, pears and peaches are sometimes used. But milk, two or three pints daily, is the food *par excellence*.

By way of treatment in this case, the wet pack, epsom salts and cream of tartar, a solution of the citrate of magnesia and vichy water, also a solution of the lactate of strontium, and Basham's mixture were used. The albumin ran from 1 to 2 per cent. In ordinary cases it runs from only 0.16 to 0.5 per cent. The specific gravity continued at 1040. The scrotum and penis were edematous to a very great degree. The eyes remained puffed and the arterial tension high. From time to time the urine was examined microscopically and pus, blood, and a few epithelial and hyaline casts were found. The history and progress of the case pointed to a chronic parenchymatous nephritis, immediately following an acute nephritis, a condition rarely found in children. This child died about ten days thereafter, from uremia and pulmonary edema.

Another case in point is that of a little boy 5 years old. His home was in Lookout valley. He had whooping cough the winter previous to my seeing him in July. The disease left him with albumin in the urine in large quantities. I was called as consultant in July and found him in the home of his brother, a physician on Lookout Mountain, about 20 miles from Chattanooga. He had been carried thither by his parents, who hoped that the change, from the valley to the top of the mountain, would improve his condition.

He was very edematous over the entire body. The penis and scrotum were enormously swollen. He was voiding but little urine, which was heavily loaded with albumin and of a high specific gravity. The heart was weak but not diseased, the breathing shallow, and he was able to take but little nourishment of any kind. His principal longing was for fruit. The attending physician had used the customary means of treatment, excepting the hot wet pack. This was recommended by me, as was the use of the solution of the lactate of strontium, which was given in as large doses as the child would bear. Another suggestion was also carried out, and that was to take the child back to his home in the valley, thus hoping to give the skin a chance to aid in reducing the accumulated fluid. After taking him home, the attending physician reported that improvement began promptly and recovery rapidly ensued. After six months he told me that his little brother had fully recovered so far as he was able to discern.

The prognosis, in both of these cases, was grave on account of the aggravated symptoms and the age of the patients. They are of interest, however, in that the general symptoms and age were about the same. But in the one case the cause of the kidney involvement could not be determined, while in the other the cause was attributed to the whooping cough. In the first

case, however, we might ascribe the cause to cold and wet weather, but it has been observed that exposure to inclement weather very rarely gives rise to acute degenerative nephritis.

As the prominent symptoms in these cases are albumin, high specific gravity and edema, I want to state that these symptoms are especially found in interstitial and chronic parenchymatous nephritis, active hyperemia, catarrhal nephritis, parenchymatous degeneration, passive hyperemia, and acute nephritis. In acute nephritis the amount of albumin depends upon the extent of involvement of the glomeruli, and the amount of casts depends upon the extent of the tubules affected.

A word about edema in renal disease. As this is a common symptom, it has always puzzled me to explain, to my own mind, the cause of its presence. Edema is the accumulation of watery fluid from the blood vessels, into cellular tissues and lymph spaces. Several theories have been advanced in explanation of this. 1.—the original theory was that, because there is an accumulation of the daily quantity of urine, the tissues are saturated with the water not excreted by the kidneys. 2.—Edema is the cause rather than the result of diminution. 3.—Transudation is due to the changes in or injury to the endothelium, increasing the perviousness of the blood vessels. None of these theories are fully tenable because the etiology and pathology of edema have not been satisfactorily explained. Hence, another theory was pronounced by Landerer, which is, that the relaxation of the tissues and loss of elasticity prevent the forcing of natural lymph into circulation, and as a result, a watery infiltration of the tissues ensues.

To meet and treat the symptoms of edema and ascites requires some thought concerning the condition of the patient. Of the three kinds of expellants, namely, diaphoretics, diuretics, and cathartics, the latter are indicated when general edema and threatening uremia exist. They are more certain in their action. Podophyllin, 1-10 grain, may be given repeatedly to a child 5 years old. Compound jalap powder, 5 to 10 grains, may also be used. A bath, 105 to 110 F., with the child wrapped in a woolen blanket, may be given for fifteen or twenty minutes. Then remove the child, take off the wet blanket and wrap in dry, hot blankets until reaction sets in. You may also add muriate of pilocarpin, in doses of 1-20 of a grain, by the mouth, to a child of 2 years, or hypodermically, to one 5 years old. Where ascites is extreme, tapping is of value. Teaspoonful doses of infusion of digitalis, every four hours, to a child 5 years old, is best.

TRAUMATIC AFFECTIONS OF THE UVULA

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From its peculiar position in relation to the oropharynx the uvula would appear to be extremely susceptible to severe traumatic influences, as it is constantly subjected to minor traumatisms in deglutition and excessive vocal efforts, yet reported cases of damage to this portion of the pendulous palate are comparatively rare, the text-books containing little or no reference to traumatic affections. The anatomic structure of the uvula, and its mobile characteristics, render it to a great degree exempt from traumatism otherwise