von Nussbaum's, speak strongly for it in this serious operation. Some time ago, I was challenged at a medical meeting, where I related a case of ovariectomy which I had treated antiseptically, and I was asked why I was not content to follow the path Mr. Wells has so successfully trodden. Mr. Thornton's successes, under Mr. Wells's own eye, are a good justification, if such were needed.

THE ALBUMINURIA OF ADOLESCENTS.

By CLEMENT DUKES, M.D.Lond., B.S.Lond., M.R.C.P.Lond.,
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BEFORE the British Medical Association at Manchester in 1877, Dr. Robert Barnes, speaking of pregnancy, said that the vascular system undergoes a remarkable development of growth and tension, and the nervous system a marked alteration; with this augmented nervous and vascular tension, there is an increased strain upon the entire glandular system, more manifest in the kidney, and we get albuminuria; but there is an increased hyperæmia everywhere.

A similar condition, though less marked, occurs at puberty; and this increased vascular tension, this increased forcing of the blood, often renders the kidneys hyperæmic, and there is albuminuria; sometimes a sudden change of temperature, sometimes an error in diet, sometimes excessive exertion, sometimes mental emotion, is sufficient to induce it. Then it may be persistent for a very long time, or it may entirely disappear and reappear, or may be absent at one time of the day, present at another.

In a discussion at the Royal Medical and Chirurgical Society in June 1873, Sir William Gull is reported to have said that boys about the age of puberty frequently have albuminuria, becoming languid, weak, and pallid, but he did not know the cause of it. At the same meeting, Dr. George Johnson said he was aware of the occurrence of albumen in young subjects; in most instances, it might be traced to scarlatina, diphtheria, erysipelas, or exposure to cold.

Having a very large number of boys under my medical care, this albuminuria has occurred so many times, that now a furred tongue and headache, with a firm pulse, not relieved by ordinary remedies in a few hours, makes me seek albumen.

The history of a case is this. A boy feels very poorly, out of sorts; he has a furred tongue, headache, disinclination for work or play, or food, irregular or constipated bowels; sometimes a slight cold is also present, but mostly not; sometimes facial dropsy, sometimes syncope occurs. I should add that, though stripped and examined most carefully, no other physical signs can be found; certainly no sore throat, nor desquamating skin and tongue, and no quick pulse. Being at a loss to account for the symptoms, I examine the urine, and find albumen, sometimes much; more often only a trace. This albumen continues for various lengths of time. In one it only lasts a few days and then disappears, though, with every subsequent chill or error in diet, for months to come, he gets headache, and, on examination, albumen is again found. In another, it is most persistent, except the patient be placed on milk diet, in bed and between blankets, when it disappears at once, but may reappear at any moment, on getting him up, and letting him have meat; though sometimes getting him up and giving milk only does not produce it, but if even a piece of bread be added to his diet, then down goes the albumen. After a time, when warm in bed, he can eat a full diet of meat, and yet not produce the faintest trace of albumen; though every drop of urine passed is examined. There is often, not generally, some anæmia; the anæmia of puberty, I think.

Bencke says, "that the development of the heart at puberty is to be regarded as a very important phase in its development, in regard both to the physiological and the pathological occurrences of this period of life." He says, also, "that the large arterial vessels attain their relatively narrowest condition at the time of puberty. Hence, with the increased development of the heart with relatively narrow arteries, we must get increased arterial tension."

Is not this hypertrophy of the heart at puberty, and this increased arterial tension causing hyperæmia of organs, but a beautiful physiological example of pathological states, we very often see? At puberty, in most cases, we do not get albumen, unless we have some trivial exciting cause, as an error in diet; then the kidneys cannot bear the extra strain. Put that patient to bed, and let the skin help the kidneys, and we make the albumen disappear, as a rule, whatever diet we give, by diminishing their work, and lessening the arterial tension; but if the patient be up, this arterial tension is still further increased by taking food (which causes a hyperæmia of all glands), and so a greater hyperæmia of the Malpighian capillaries is produced, and the blood-

serum transudes, and our albuminuria is found. If we give milk only, the natural hyperæmia is so little increased, and the urinary solids are so little augmented, that we escape the albuminuria. Looking for a pathological example, is it not the increase of the impulse of the heart, and the number of its beats, *plus* the increased tension of inflammatory diseases and fevers, *plus* the increased amount of nitrogenous elements in the urine, that causes the albuminuria of pneumonia, pleurisy, etc.?

This albuminuria of puberty is often so persistent, and, even when it has disappeared, recurs again and again so often, that I fear many of the cases pass on to chronic Bright's disease—although this I can only surmise, as I lose sight of them; but long continued or often repeated hyperæmia is the cause of all kidney-disease.

The knowledge of these cases makes me, almost invariably, examine the urine of every patient I see; and I never omit to do so in the examination of cases for Life Insurance.

I have kept notes of several cases of various forms of albuminuria occurring in adolescents, all of which I give as examples.

CASE I. Mr. A., aged 16, had scarlatina in January 1876.—On February 1st, 1876, there was albumen in his urine, which occurs at times still.—On October 10th, 1878, there was a faint trace after a cold; no casts.

CASE II. Mr. B., aged 13, never had scarlatina; had acute tonsillitis with acute nephritis, and bloody urine on February 10th, 1877. The urine continued bloody for about two days, and albumen was found more or less until March 8th.—On March 17th, there was no albumen.—On October 20th, 1877, there was albumen in the urine, and a headache, which continued for a week.—On December 14th, albumen was again present.—On December 18th, the urine was free from albumen. He went home for the holidays.

CASE III. Mr. C., on March 20th, 1877, had puffy eyelids, headache, white face, furred tongue, and had albumen in the urine. He had scarlatina in 1871. The albumen continued on and off until April 2nd, when he left my care.—On September 21st, 1877, there was still considerable albumen.

CASE IV. Mr. D., aged 16, never had scarlatina.—On March 10th, 1877, he felt poorly, with headache, slight cold, and furred tongue. The tongue did not clean; I, therefore, examined his urine, and found albumen. On putting him to bed, it immediately disappeared, and his tongue cleaned. This case and Case iii were in the same room together, in beds side by side, and, during the three weeks they remained under my care, it was curious to have two cases at once that behaved exactly alike; *e.g.*, both in bed, no albumen; both up, and taking milk only, no albumen; both in bed, and having some bread and butter to eat, no albumen; both up, and having bread and butter to eat, albumen at once; both in bed, and having meat diet, no albumen; both up, and having meat diet, copious albumen. These examples occurred more than once, and the same diet given to each, always gave the same results; though Case iii always had more albumen than Case iv.—On September 21st, Case iv had albumen (he had just travelled to school), about one-fourth. He then returned home, and I have not had an opportunity of examining his urine since.

CASE V. Mr. E., aged 19, on June 12th, 1877, had slight cold, with furred tongue, headache, and albuminuria; this continued until June 29th.

CASE VI. Mr. F., aged 14, never had scarlatina.—On June 13th, 1877, had albumen, with headache, and brown furred tongue. He went into school well on July 4th.—On September 21st, there was no albumen.

CASE VII. Mr. G., aged 17, on June 13th, 1877, complained of headache and feeling out of sorts; he had furred tongue, no cold, he could not do his work. This continued until July 1st, when he fainted in chapel.—On July 2nd, as his headache was no better, and as he fainted the previous day, I stripped him and examined him thoroughly. I could detect nothing wrong, and, therefore, examined his urine, as the last thing in a complete examination, and then discovered albuminuria. This disappeared on his being put to bed and having milk only.—On July 23rd, he went home well; but, during August or September, albumen again appeared.—On September 21st, there was no albumen.—On March 6th, 1878, there was no albumen. He never had scarlatina.

CASE VIII. Mr. H., aged 15, on October 12th, 1877, had rigors and headache.—On October 14th, there were cedema of the eyelids, and albuminuria. He never had scarlatina. This albuminuria continued until October 20th. During January 1878, rigors frequently took place; and, always after a warm bath and bed, he seemed quite well again.—On February 10th, I chanced to see him, and saw cedema of the eyelids again, and albumen was found on examination. He was put to bed, and every drop of urine was examined until he left my care.—On February 10th and 11th, albumen was persistent, although

he was in bed.—On February 12th and 13th, it was absent; he was in bed.—On February 14th, he was allowed to sit up; and, at 7 P.M., albumen appeared, which continued until February 16th, when I put him to bed again.—On February 19th, he got up. At 2.30, after a small meat dinner at 1 P.M., his urine was loaded with albumen, quite one-third on depositing; he was, therefore, put to bed, and allowed milk only.—On February 21st, he had meat, and remained in bed.—On February 25th, he got up, and had meat at 1 o'clock for dinner. At 3 P.M., his urine was again loaded. He was, therefore, put to bed.—On March 2nd, he got up, and had milk only. There was no albumen.—On March 4th, he got up, and had bread and milk for dinner, and an egg and bread and butter for tea. Albumen again appeared, about one-sixteenth.—On March 7th, he got up again but had milk only. He had three visitors, and albumen was found in his urine at night.—On March 11th, he was washed limb by limb, while in bed, at 10 A.M. Albumen was found at 11 A.M.—On March 15th, he got up (as his parents wished him to go home soon) at 6 P.M. His urine contained albumen, about one-third. The albumen was deposited by nitric acid in cold urine, and also by heat and nitric acid. The specific gravity was 1019. At 9.30 P.M., the urine contained about one-sixteenth of albumen.—On March 16th, at 8 A.M., there was only a trace; at 9.30 A.M. about one-fourth; at 12.45 P.M. a trace; at 5 P.M. one fourth; and, at 9 P.M., also one-fourth, of albumen.—On March 17th and 18th, albumen was present all day.—On March 19th, he travelled home, and was under treatment for three months at the seaside.

CASE IX. Mr. I., aged 16, never had scarlatina. During vacation he fainted in church, and was sent to school, suffering from general debility, for which a tonic was requested, and I was asked to see him about it. Feeling his hard slow pulse, and observing his muddy countenance, and furred tongue and headache, I immediately examined his urine and found it albuminous. On September 28th, 1878, he was put in bed, and allowed milk only. The albumen disappeared, and it has not returned, although the urine is examined regularly once a week.

CASE X. Mr. X. aged 15, had scarlatina in 1869. On November 7th, 1878, he came to me saying, "Please, sir, I always feel so faint when I have been playing football or running"; but he had never actually fainted. Feeling his pulse, I found it extremely hard and firm, and I had him stripped to examine his heart. There was no valvular disease, but its impulse was heaving and hard. From the above conditions of pulse and heart, together with his pallid dirty countenance and furred tongue, I suspected albuminuria; and, on immediately examining the urine, I found about one-fourth albumen. He is now under treatment.

I am fully conscious of the imperfections of these notes, which are only hurried notes, taken at the bedside.

REMARKS ON THE ORIGIN OF TWO CASES OF ENTERIC FEVER, IN THE HOMERTON FEVER HOSPITAL.

By ALEXANDER COLLIE, M.D., Medical Officer to the Hospital.

MARIA ALLEN, aged 21, a laundry-maid in the service of the hospital, was admitted into the enteric ward on the 12th of May, with well-marked enteric fever of from eight to fourteen days' duration. Convalescence was established on the 10th of June, and on the 12th of July she was discharged recovered.

Sarah Allen, aged 25, sister of the preceding and also a laundry-maid in the service of the hospital, was admitted into the enteric ward on the 30th of July, with well-marked enteric of about ten days' duration, and is now (August 19th) still under treatment. The former had been upwards of two years in the service, as ward-servant and occasional laundry-maid, in both of which situations she would be exposed to enteric effluvia; and the latter, wholly as laundry-maid, for about two years and a half.

The interest of these cases lies in the question: How did they arise? In attempting to answer this question, one thinks of the laundry at once, and particularly in reference to the Allens, whose special duty it was to sort all the linen and to wash what was soiled. The origin of an infectious disease from linen soiled by the discharges of the sick is a generally received opinion; but it has not been observed to arise in this way at Homerton: for, of upwards of one hundred persons, mostly young women, who have been engaged in laundry-work there during the last seven years, one only contracted any fever, a laundress aged 40. With reference to the Allens, when we consider that Maria

had been engaged daily more or less at the soiled-linen tub for upwards of six months continuously, and for about two years off and on, and her sister for upwards of two years and a half, and both with impunity; that they were both attacked at the time of year when enteric fever is at its minimum; and when, therefore, as was the fact with us, there would be less soiled enteric linen to wash than usual, I think this mode of origin may be set aside, especially if any other more reasonable mode can be shown. As regards drainage, the drains of the laundry were in good order, and had not been once stopped during the year.

As regards lodging, they slept, along with ten other persons, on the second floor of the front part of the hospital, in well-lighted and well-ventilated bedrooms, belonging to which there was a closet on a lower landing common to these twelve persons. By their carelessness, this closet was frequently stopped. It was so on the 16th and 30th of April; on the 14th and 20th of May; on the 17th of June; and on the 8th and 22nd of July. In the majority of instances, these stoppages would not have lasted more than a few hours, and in none more than twenty-four to forty-eight, because the engineer examines each closet daily, Sundays excepted, so that the stoppage of Monday, the 22nd of July, might have lasted forty-eight hours, *i.e.*, from the engineer's visit of Saturday morning to his visit of Monday morning. Were these stoppages, or any of them, the cause of the illness of the Allens? Maria was admitted to the ward on the 12th of May, having been ill fourteen days, which would make the commencement of her illness the 28th of April, exactly twelve days from the stoppage of the 16th. Sarah was admitted on the 30th of July, having been ill about ten days, thus making the commencement of her illness the 20th of July, exactly twelve days from the stoppage of the 8th—intervals of time which would suit admirably the incubation period of enteric fever; for they agree almost to a day with the only observations upon which any opinion can be founded about enteric incubation, *viz.*, those of Dr. Buchanan on cases seen by him at Guildford. The stoppages of this closet, it may be urged, were of too short duration to breed fever; but it is impossible to say how much sewer air is necessary to give rise to enteric fever, or what duration of block may be necessary to produce that air; so that an adherent of the pythogenic theory might find, in the blocking of that closet, a satisfactory explanation of the illness of the Allens. Such explanation appears to me defective, because it does not explain the immunity of ten other persons, all exposed to the same influences as the Allens, two only of whom had had enteric fever, and seven of whom, by their ages, which ranged from nineteen to thirty-three, were very susceptible to it—fifteen to twenty-five being the age of maximum susceptibility after childhood. The closet, then, may fairly be excluded. The cause, whatever it was, would appear to be one acting on the Allens alone. Did they catch the disease outside the hospital, either at their own home or at some other house where they might have been visiting? I found, on inquiry, that the only house which they had visited during the last six months was their mother's, No. 50, Brook Street, Homerton. This house is one of a series of blocks of buildings lying between the Homerton Hospitals and Homerton High Street, the sanitary arrangements of which are very defective. Many of the closets have no water at all, and in others the supply is deficient. I found the pans almost black with indurated filth, and heaps of garbage in the small yards; pythic matter in abundance everywhere, and stinks to every one possessed of a nose. Here, if anywhere, are conditions for the production of enteric fever, if the pythogenic theory be correct. Here, if anywhere, one would expect it to be endemic, whereas, strange to say, it is almost unknown. Notwithstanding these presumably favourable conditions, and the poverty of the population, not a single case of enteric fever has been admitted into the Fever Hospital from any of the numerous blocks in the houses referred to; and Dr. Fisher, Dr. Turtle, and Mr. E. Smith, practitioners there, inform me that it is almost unknown, and, as a matter of fact, there is not a case there now. The house which concerns us is one of the worst. In it the closet had no water laid on; the pan was coated with black indurated filth, which was treated to a pailful of water every morning. Of the arrangements generally, it may be said briefly that they were bad. On the ground-floor of this house lived the mother, aged 47; the father, aged 51; and three boys, aged respectively 14, 15, and 21; and on the upper a man, aged 70; his wife, aged 60; and a child, aged 7—nine. All these were in good health, and there had been no fever there for at least eleven years. A little sister of the Allens, aged 3, however, was on the evening of August 5th seized with diarrhoea, and on Saturday the 9th died in convulsions, which Dr. Fisher attributed to meningitis. There was no enteric fever then, nor is there now, in Brook Street, or indeed in the neighbourhood. In these circumstances, I think it may be concluded that the Allens did not contract their enteric in Brook Street. To ordinary filth decomposition they had been exposed in their home visits without result; to special filth in sheets soaked by enteric