

forty-two ounces of water, at 118°. During the injection, the pulse became perceptible, the temperature rose to 98°, the pain over the heart and the dyspnoea somewhat diminished; but the relief was much less than I had hoped for, and I suggested that probably a clot had formed in the right side of the heart. She vomited several times after the injection. No more medicine was given; and there was no action of the bowels from the time of her admission until her death, which occurred at 4 A.M. on the following day—i. e., ten hours after her admission.

Shortly before her death, there had been some appearance of improvement in her condition; and, on examination *post mortem*, there was evidence that reaction had just commenced. The evidence was great engorgement of the lungs, such as we have not seen in any case after death in the stage of collapse; and the upper part of the small intestines, for a length of about eighteen inches, contained bright yellow bile. The secretion of bile, then, had recommenced just before death. The small intestines below contained a considerable amount of the usual choleraic secretions, but tinged of a dirty pink colour by admixture with blood which had escaped from the abraded mucous membrane. The stomach contained a small quantity of the castor-oil, but none had passed on into the bowel. In the right ventricle of the heart there was a firm decolorised clot attached near the apex of the heart; it was of considerable length, and extended in a tapering form about four inches into the pulmonary artery. This clot had evidently formed during life, and probably before we injected the vein; it must have obstructed the circulation, not only by the space which it occupied within the artery, but by preventing the closure of the semilunar valves. Hence, probably, the painful distension of the right side of the heart, and the small amount of relief which the hot injection afforded.

Our treatment in this case was thoroughly inefficient. Would any other treatment have been more efficacious? I know of none that would. It was evident after death that, if she had completely rallied from collapse, she would have died exhausted by hæmorrhage from the bowels.

THE CLIMATE OF PODOLIA is probably the healthiest in the world. During the last five years 354 persons have died at from 95 to 110 years of age, 320 of whom were under 100 years old, 27 between 100 and 105, and seven between 105 and 110. Of these 141 were women.

DEATH OF DR. CONQUEST. The death is reported of Dr. Conquest, at Shooter's Hill. The deceased, who was 77 years of age, was formerly lecturer on midwifery at St. Bartholomew's Hospital. He wrote a pamphlet on *The Use and Abuse of Money*, the publication of which led to his giving a prize of a hundred guineas for the best essay on the subject. This resulted in the publication of *Mammon*, by the Rev. Dr. Harris, a work which excited some interest and obtained a large sale. He also published a work entitled *Outlines of Midwifery*, which has passed through six editions in this country, and has been translated into the French, German, and Hindustanee languages. Dr. Conquest was also the author of a revised edition of the Bible, generally known as *The Bible with 20,000 Emendations*.

Original Communications.

TWO CASES OF FURUNCULAR ACNE IN WHICH THE URINE CONTAINED AN INORDINATE QUANTITY OF UREA, "AZOTURIA."

By THOMAS BALMAN, M.D., Liverpool.

In the first edition of his work on *Stomach and Renal Diseases*, published in 1821, Dr. Prout has directed attention to a peculiar condition of the urine characterised by a superabundance of urea, the quantity of water and other ingredients being unaltered. Subsequently, Willis mentioned a similar disorder, to which he, I think not inappropriately, has given the title of azoturia. (*Urinary Diseases and their Treatment*. By Robert Willis, London, 1838.) As the independent existence of this malady has since been called in question by some more recent authorities, and believing that it is of no unfrequent occurrence and entitled to a more prominent position in our nosology than it has yet obtained, I have ventured to bring before the members of the British Medical Association the two following cases, which I take to be examples of the disease in question. Both of the cases which I shall presently read to you, and in which this condition of the urine was observed, were suffering from a somewhat severe cutaneous affection, "follicular acne."

Dermatologists have described several forms of acne. Acne simplex, though oftentimes of trifling importance, is known to be of very frequent occurrence, especially in young and phlegmatic persons of both sexes, and is generally amenable to treatment. The cases in which I have noticed ureous urine have, however, seemed to belong to the third species of Willan's classification, viz., Acne indurata; though it has a strong resemblance to, and is doubtless often taken for, the next species, acne rosacea. The several forms of acne, originating as they all unquestionably do in the sebaceous follicles of the skin, I agree with Mr. E. Wilson might severally be classed under two heads: Acne simplex, and acne rosacea; the first three species, acne simplex, acne punctata, and acne indurata, being mere modifications of the same form of disease. Acne rosacea, however, independent of the erythematous rash, which is its main characteristic, often leads to a dilated and tortuous condition of the superficial capillary bloodvessels of the face, is generally met with in persons of more advanced ages, and is more frequently the result of intemperance, when not of hereditary origin, than the cases I am about to mention. Acne furunculosa would convey a more exact idea of the anatomical element of the eruption, and as the term is not altogether new in connexion with the disease, I propose to retain it in this place.

The different forms of acne, affecting as they invariably do the face, are known to be sometimes of an extremely obstinate character, resisting for years the most skilful treatment even of some of our most eminent physicians. The disfigurement these eruptions often occasion, and the mistaken and erroneous notions commonly entertained as to their origin, are a perpetual source of annoyance to females especially, who are ready to make any sacrifice of personal comfort that may seem to hold out the slightest prospect of cure. These complaints, therefore, should have the best attention of the medical practitioner.

The first case occurred in 1852, and the following

is an abstract of the notes I then made of it. W. H., aged 21, unmarried, clerk in a merchant's office, and of most temperate habits, consulted me on Nov. 4th, 1862. He stated that he had suffered from slight symptoms of indigestion for several years, though not sufficiently urgent as to require medical assistance. About two years previous to his coming to me, a few red pimples first appeared on his forehead, which, to his great dismay, gradually spread over the whole face; as soon as one set of pustules subsided, others made their appearance in a more aggravated form, so that his visage was literally seamed and furrowed with indelible scars and cicatrices caused by this rapid recurrence of the disease. Both cheeks still exhibited a copious display of vari of an irregular and slightly ovate form, and of different degrees of consistence.

The skin and integuments over the whole extent of the eruption were observed to be thicker than natural, and to present occasionally a dark livid appearance, evidently arising from the intense congestion, both of the glandular as well as of the subcutaneous cellular textures in the immediate vicinity of the eruption. The pustules softened very slowly, without pointing as in ordinary pustular inflammation, and the contents had consequently every now and then to be discharged by the aid of a lancet. Sometimes two or more vari would coalesce, and thus form a tumour of the size of a horse-bean or small hazel-nut.

Nov. 4th. Examined the first specimen of his urine, it was slightly turbid from lithates, and had a strong acid reaction to the blue litmus. Its specific gravity was 1.035, nitric acid, without concentration of the urine, quickly converted the portion so treated into a solid crystalline mass of nitrate of urea.

This unusually great density, dependent as it manifestly was upon an excess of urea, at once attracted my attention, and led me afterwards to examine the urine of this patient carefully for a considerable time. During the subsequent four weeks the specific gravity was found to oscillate from 1.020 to 1.033. The night specimen, *urina cibi*, having always the greatest density averaging 1.031, and the morning specimen, *urina sanguinis*, 1.025. It was now bright in colour and without any perceptible deposit. The quantity passed in twenty-four hours was about 44 ounces. Oxalate of lime was present in almost every specimen. He was ordered a mixture with ten grains of the bicarbonate of potash in the compound infusion of gentian, twice a day, and an aloetic and steel pill at night.

Dec. 9th. As he was no better, and the urine in no degree changed, I requested him to abstain altogether from animal food, and to live upon a diet as free as possible from nitrogen, that I might ascertain whether this surplus urea was due to food, or to ulterior tissue changes. He was likewise ordered to take ten minims of the tincture of colchicum in some bitter infusion, thrice a day.

Dec. 23rd. A fortnight afterwards a marked improvement had taken place in the eruption, he also expressed himself as feeling as strong and well as when taking his usual diet of meat and beer once or twice daily. The specimen of urine he brought with him was of a pale straw colour, perfectly bright, and its specific gravity was very little above the average standard: the night specimen being 1.021, and that passed in the morning 1.018. Finding he was so much better, he begged hard to be allowed to return to his usual routine of living, he was accordingly allowed animal food, once daily, with a glass of bitter ale if he chose.

Feb. 25. Two months from the beforementioned date, during which he had rigidly adhered to this

very simple diet, he returned to me as bad as ever, his face covered with boils, and altogether in a most unsatisfactory state, the urine had returned to its former great density 1.035, and darker in colour than I had ever before seen it. Prout describes the urine in such cases as being sometimes so dark as to resemble a mixture of porter and water. Unfortunately I was obliged about this time to leave Liverpool for some months, and I therefore saw him no more.

Two other cases have more recently occurred to me in the practice of the Dispensary for Diseases of the Skin, one of which I have carefully watched for several months.*

Eliza G., aged 25, unmarried, had suffered from furuncular acne for above seven years. She had tried various modes of treatment without deriving the slightest benefit. She was of a sanguine and excitable temperament, and whilst these notes were being taken, an uncomfortable scarlet hue seemed every now and then on the slightest emotion to mantle her otherwise mottled and already highly tinted cheek. Her general health was nevertheless tolerably good. She, however, complained of a slight feeling of lassitude and fatigue after walking, and was also subject to occasional attacks of indigestion. There was a dry clammy taste of the mouth, and the tongue I thought looked larger and more flabby than natural. The saliva was acid; the menstrual flow was healthily and regularly performed, but her face, she observed, was always worse about these periods.

The urine differed slightly from the previous case. Its specific gravity being of a more uniformly high character, from 1.028 to 1.035; in no instance below 1.028. In appearance it presented nothing unusual, perhaps a little darker in colour than natural, very acid, and showed the same characteristic increase of urea. Oxalate of lime was occasionally present, and traces of sugar in one of the specimens examined. She suffered every now and then from slight dysuria, and urgent calls to relieve the bladder, chiefly in the daytime. The quantity very rarely exceeded three pints in the twenty-four hours, more frequently under two. She took a variety of tonics, including quinine with small doses of opium, from which I have found the greatest benefit in several similar cases, without any very decided results. A mixture containing the alkaline carbonates, magnesia and potash, with colchicum, and five minims of the tincture of opium, did her the most good. Cod-liver oil, which is reputed to have a marked effect in lessening the quantity of urea in the urine, she could not take. Acetate of potash with ammonia, and the bicarbonate of potash were tried, without producing the slightest change in the eruption, nor did it appear to diminish in any marked degree the quantity of solids in the urine. Benzoic acid was also tried with no better results.

I saw this young woman about a month after relinquishing all treatment. The cutaneous affection in the whole was decidedly better, the skin being clearer and of better colour, and the vari fewer in number than formerly. The condition of the urine, however, remained unchanged, the specific gravity of the last specimen examined being still as high as 1.033.

GENERAL REMARKS. It is well known that the quantity of urea in the urine may be temporarily increased, both absolutely as well as relatively under a great variety of circumstances. In health, free action of the skin, a full meal with wine in moderation will

* This case is one so exactly similar as regards the local cutaneous affection to that I have just related, that it is needless to dwell upon this feature of it.

cause the urine to be secreted of a deeper colour than usual, and the solid matters consequently in considerable excess. In several diseases the same thing may happen. In pneumonia, several dyspeptic and febrile affections, when the urine becomes highly concentrated, it is of frequent occurrence, and depends upon a diminishing secretion of water only. In Typhus, Dr. Parkes found as much as 883 grains in twenty-four hours, and in a case of pyæmia, Vogel detected 1240 grains or nearly three ounces of urea within the same period. A case is recorded in the third volume of the *Medico-Chirurgical Transactions*, by Dr. Bostock, of a patient, a female, discharging five quarts of urine daily of a specific gravity of 1.034, not saccharine, which on analysis was found to contain nine ounces and a half of solids, seven ounces and a half being urea, and two ounces salts.

This would be rather more than six times the average quantity for a healthy man. The patient recovered completely under the use of chalybeates.

The condition of the urine I have described, differs materially from all these cases: 1st, In the more or less persistent character of this secretion; 2nd, In the relative as well as absolute quantity of urea, as compared with the other ingredients, the quantity of water being normal, or only in slight excess. They correspond, therefore, with the first form alluded to by Prout, excess of urea without diuresis.

Sometimes the quantity of water, together with the urea and other products of the urine, are simultaneously increased. Excess of urea with diuresis: in such cases the quantity of urine discharged is described by Dr. Prout as being excessive. The quantity of renal urea in any given specimen may under such circumstances be relatively less than in health, but owing to the increase in the quantity of the urine, absolutely much above the natural standard. Prout considered these affections to be of rare occurrence, so much so indeed, that, where he had seen one case of this last form of the disease, he had seen twenty cases of diabetes. Parkes says, "I have never seen a disease of this kind; all the cases of excessive urea I have seen have been either connected with pyrexia, or with some peculiarity of diet, excess of nitrogenous substances, or have been examples of diabetes insipidus, with excess of urea." Willis, who in his valuable work devotes several pages to its consideration, seems only to have noticed the second and more uncommon form of the disease. Most of the more recent cases I have read of, independent of the cutaneous affections with which both of my cases were associated, differ in some other respects.

The case mentioned by Dr. Sieveking in the *Journal* for June 1865, was 53 years of age, had jaundice, diarrhoea, and was otherwise extremely nervous and debilitated. Prout's cases all occurred in middle aged men, of thin, spare habits, and one likewise unusually nervous and depressed. Dr. Prout only met with one instance in the female. The cases recorded by Dr. Parkes and Roberts were also men of about 50. The daily flow of urine in Parkes's case amounted to ninety-six fluid ounces, in that of Dr. Roberts only thirty-four ounces, and the quantity of urea was never more than five hundred and fifty grains daily. Dr. Handfield Jones, in the October number of the *Journal* for 1861, under the title "Baruria," gives six additional cases, five males and one female. Three were under 25 years of age, the others between 45 and 50.

They were all persons evidently much out of health, and suffering from a variety of anomalous nerve symptoms; one was epileptic and died of dementia, the others yielded apparently to treatment.

The question of most importance to determine in connexion with the cases I have recorded, is the pathological relation of this condition of the urine to the cutaneous affection from which they both suffered; and, granting this supposed connexion, to trace the organ or function at fault in its production. The first case seemed to show there was a very obvious connexion between the two phenomena. By cutting off the supply of nitrogen from his food, in the instance of the young man first noticed, the density of the urine was immediately reduced, and the disease appeared to yield in a very striking way, but returned on his assuming his ordinary diet of meat once or twice daily, showing, apparently, as if a portion at least of the nitrogen taken as food is converted directly into urea in the blood, and eliminated by the kidney without becoming fixed in the general textures of the body. It would hardly be safe, however, to build up a theory of this disease from a single isolated case, as the main facts are unfortunately negatived in the second case. Similar restrictions, perseveringly carried out for many weeks, producing no such corresponding results.

This over-production, if I may use such an expression, of one of the most important and essential constituents of the urine, can have, I presume, but three sources. 1. It may originate from some defective or perverted action of the primary assimilating processes of digestion or chylication, whereby, as I have already stated, a portion of the alimentary materials are at once transformed into urea in the blood. 2. From that mysterious and more distant function of the animal economy by which the old and used up materials are unceasingly being carried away, and new ones deposited, and known to physiologists as the hystolic process of disintegration, or metamorphosis of tissue; this is probably the main source of urea in a healthy individual. 3. From that less probable and scarcely recognised channel, a morbid or excited condition of the kidney itself, analogous, perhaps, to what some of the older writers regarded as a state of erythism of the organ, but which more advanced pathologists would, with perhaps greater propriety, call paresis of the renal plexus of nerves, with its attendant results, dilatation of the bloodvessels and consequent increase of blood, and when there is more blood sent to an organ than usual, we may expect temporary increase of function. This is probably the condition of the kidney in cases of diabetes insipidus, and some nervous affections, in which such an enormous quantity of water is sometimes discharged, and which is often so effectually controlled by opium. In either case, we should probably have an abnormal quantity of urea very constantly circulating in the blood, spoiling, just as an excess of water is known sometimes to do, the red particles, and thus unfitting this vital stream for the healthy performance of nutrition, upon the due integrity of which the physiological well being of the individual must depend.

ETHER-SPRAY IN THE REDUCTION OF HERNIA.

By A. B. STEELE, M.R.C.S.E., Liverpool.

THE account of Dr. Barclay's case, published on the 20th ult., induces me to mention, that some months ago I used the ether-spray with success in the reduction of a rather large inguinal hernia in a boy about 4 years old, who had worn a truss from early infancy. The hernia had remained down sufficiently long to cause vomiting and other early symptoms of strangulation.

Having persevered with the taxis in the ordinary