

coloured sheet" a short distance in front of his face. These sensations used to occur before he lost his sight, but the coloured sheet never obscured, or gave its own tint to, any objects that might be in the field of vision. Each vowel sound had its own corresponding tint, which was always the same for that vowel. When the vowel sounds were uttered in rapid succession there was a confused, rapidly changing, faint screen of colour, but it did not obtrude itself on his consciousness, unless he expressly directed his attention to it. Thus the colour excited by *ah* was light blue, that excited by *eh* pink, by *ee* green, by *oh* white, and by *oo* light blue (with a metallic sheen on the surface). He had no colour associations with musical notes. With regard to the letters of the alphabet, he associated colour "in his mind" as he said, but did not see the coloured letters. In contrast to the unvarying tint of the colour associated with the vowel sounds, these alphabetical *imagined* colours were not quite constant. Thus he told me that "*b* was red last year, but now it is always blue." His visual memory was remarkably good. When he wishes to recall some event in his life at the time when he had his sight, the whole scene, he said, reappears vividly before him in all its details and colours. It fades, however, in half a minute and cannot again be recalled in this vivid pictorial form.

CASE 2. *Colouration of musical notes, of letters of the alphabet, numerals, months, &c.*—J. H—, twenty years of age, has been blind since he was five years old, but before that could see perfectly well. He has had these various secondary colour sensations "ever since he can remember." 1. He associates colour with the sound of musical notes. He has a definite colour sensation with each note of the octave, and there is even a distinction between notes which are represented approximately by the same ivory key on the pianoforte, such as C sharp and D flat, the "photism" (to adopt the term employed by Bleuler and Lehmann for the secondary colour sensation) for C sharp being that for C, somewhat brightened by being stippled with glistening white dots, while D flat gives rise to a photism rendered more sombre than that for D by being covered with large black dots. The photisms corresponding with the half-tones of the other notes are formed in the same manner. The colours are as follows:—C, blue; D, navy blue; E, bright yellow; F, brown; G, green; A, white; B, black. He has similarly a colour sensation corresponding to the key-note. Thus if a piece were written in E, he would experience a sensation of yellow all the time it was being played. He said there was a kind of background like a curtain, at some distance from him, of a colour corresponding to the key-note on which flit coloured streaks corresponding with the individual notes played. The notes are altered in brightness by being played in a higher or lower octave; but each note preserves its own colour, E and E sharp giving rise always to a yellow photism. If the colours associated with musical notes are compared with those excited by the alphabetical symbols, it will be seen that the note A and the letter A give rise to the same colour, and so on through the octave. (This correspondence does not exist in all cases.) 2. He also has very definite colour sensations when thinking of the letters of the alphabet or hearing them pronounced. The photisms are most vivid when the letters are thought of separately, but more feeble when the letters are combined into words. He seems to see the coloured letters "quite solid" about a yard in front of his eyes. The following are the colours excited:

A, White.	J, Red and black.	S, Dark grey.
B, Black.	K, Yellowish white.*	T, Light blue.
C, Speckled.	L, Black.	U, Greenish white.
D, Dark blue.	M, Bright brown.*	V, Violet.
E, Golden.*	N, Yellowish brown.*	W, Salmon.
F, Dark brown.	O, Clay coloured.	X, Yellowish white.
G, Green.	P, Bluish grey.	Y, White.
H, Light grey.	Q, Green and blue.	Z, Black with white
I, Red.	R, Slate colour.	and green spots.

* With metallic sheen.

3. He also associates colours with another series—the months of the year. It will be seen that the colours associated with the months are those of the most prominent letters. He said, however, that the colours were much more vivid than with similarly spelled words:—

January	.....	Brown and white	.....	A and U.
February	.....	Black and brown	.....	F and B.
March	.....	Brown	.....	M.
April	.....	Dark grey	.....	P.
May	.....	White	.....	A.
June	.....	Light brown	.....	J.

and so on. It will be noticed that this individual does not

associate colour with the spoken vowel sounds. I pronounced the phonetic vowel sounds *ah*, *eh*, *ee*, *oh*, *oo* in a monotone, carefully keeping my voice at the same pitch. He had the usual photism corresponding to the note at which my voice was pitched, but the phonation of the different vowels had no effect. He said that there had been no variation in the tints excited as far as he could remember.

To recite other cases in detail would only be tedious. In the second part of this paper a table will be given showing the tints excited in a number of individuals. In my inquiries alphabetical associations were most frequent, and closely connected with them were the sensations excited by such serials as the names of the days of the week, months, and familiar proper names, the colour in such case usually corresponding with that of the initial or some prominent vowel. The photism excited by these special "serial" words is much brighter and more definite than that of the same word used in another sense—e.g., March, the month, gives a much brighter photism than march, the verb. In those persons who experienced photisms with the spoken vowel sounds, as well as with letters, there was seldom any resemblance between the photism excited by the spoken *o* and the written *o*. Many cases were also met with in which people arbitrarily associated colour with vowel sounds, letters, and musical notes, but in which there was no actual sensation of colour. These cases should be grouped with those, of which I have also met a good many, who associate physical and moral qualities with the letters and numerals, speaking of them as fat and lean, good-natured, spiteful, unselfish, &c. Some excellent examples are given by Flournoy.⁵

It is worthy of remark that musical notes and melodies are, both in this country and abroad, frequently spoken of in terms of other sensations. Thus we speak of a "sweet" song, of "soft" music, of a "sharp" note, and the name of the ancient instrument "dulcimer" shows that this custom existed as far back as the time of the Romans also. Many other secondary sensations (colour, tasting, smelling, &c.) are occasionally met with, but cannot be discussed within the limits of this article.

There are some special associated sensations which have been described by other writers which must be referred to. Pedrono and Ughetti have described cases in which each musical instrument excited its own tint. In another case which has been reported, that of an accomplished linguist, there was a colour sensation corresponding to that of the language in which the conversation took place. This is probably due to the predominance of some particular vowel sound in the words employed. Thus, for example, English conversation excited a grey colour sensation of the same sound as that produced by the vowel sound *eh* (*a*); German was black, corresponding to *ah*; Italian yellow, corresponding to *ee*; and so on.

It seems possible that this faculty (or something closely allied) may be excited temporarily in some people, either by the action of drugs or by strong emotions. Several instances have been given, but the most striking is that mentioned by Théophile Gautier in relating his Haschisch experiences:⁶ "*Mon ouïe était prodigieusement développée, j'entendais le bruit des couleurs. Des sons verts, rouges, bleus, jaunes, m'arrivaient par ondes parfaitement distinctes. Chaque objet effleuré rendait une note d'harmonica ou d'harpe éolienne.*" It is also related of St. Catherine of Siena that she had a bright red colour sensation whenever she saw or thought of the host.

(To be continued.)

RENAL INADEQUACY AND ITS TREATMENT.¹

By HASTINGS GILFORD, F.R.C.S. Eng.

RENAL INADEQUACY is defined by Sir Andrew Clark, who first described it, as a "state of the kidney in which it is unable, without material diminution of quantity, to produce a urine containing the average amount of solids and a specific gravity greater than 1014."² The main clinical features of this complaint are a greater vulnerability to disease and a lack of reparative power after injury. Hence there is proneness to

⁵ Loc. cit.

⁶ La Presse, July 10th, 1843.

¹ A paper read before the Reading Pathological Society, Feb. 21st, 1894.

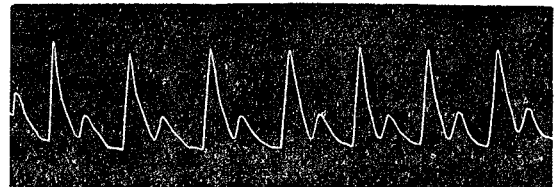
² THE LANCET, Nov. 29th, 1879.

catch cold on slight exposure, and to contract pleurisy, pneumonia, or pericarditis, and its subjects are apt to do badly after operations. From this it will be gathered that the affection is one rather of liability to disease than of disease itself. This, I believe, is true of the condition in its less marked forms; but in its severer aspects it exhibits such a group of characteristic symptoms as appears to constitute a true disease. It is a disease firstly of function and then of structure. The symptoms of the advanced disease are myxœdematous in type and consist of puffiness without œdema, harshness and dryness of skin, deliberate and somewhat difficult articulation, yellowish and swollen features with lips and cheeks of a bluish red, and the whole intellectual tone is subdued and slow. The facial appearance from one side resembles that of pernicious anæmia and from another that of chronic Bright's disease, though it differs from both.³ Another feature of the condition is that its subjects usually have small appetites, but any increase in the food taken results in an aggravation of the symptoms and a diminution in the output of urea. "Stimulants" cannot be tolerated for the same reason; and even water, if drunk in quantities larger than usual, while it causes no increase in the excretion of urine, is apt to cause an uncomfortable feeling of distension. Sir Andrew Clark pointed out that the treatment of these cases consists in protecting the patients from cold and fatigue, and in seeing that the largest amount of food is taken consistent with the greatest possible increase in the excretion of urea. The importance of Sir Andrew Clark's communication is great, for the complaint is common; it leads to a condition of chronic invalidism; it is doubtless the indirect cause of much illness and of many deaths; and it is one for which drugs have hitherto been found useless. Yet this condition has apparently received very little attention. One reason, doubtless, for this apathy is to be found in the fact that, unlike its congener myxœdema, it is an affection which usually exhibits no striking features. The subjects of it are usually women of middle age, with flabby muscles and of a dreary and dispirited aspect, who come to us again and again for the treatment of slight ailments. They are commonly regarded as invalids who think too much of themselves and of their "fads" in regard to medicine and diet. They are so careful to shut out draughts from their rooms that we think the reason for their catching cold so readily is that they have become "delicate" as the result of their extreme dislike to cold air. Their friends are prone to complain of their very poor appetites, and to ask for "strengthening medicines," or tonics, which do them no good, but, on the contrary, are, as a rule, positively harmful. Indeed, they seem never to tire of taking medicine, and though they often speak of the good it does them, we ourselves can see no evidence of it. Patients with renal inadequacy, in short, are too often regarded as cases devoid of interest, for they are unsatisfactory alike in their symptoms, in their prognoses, and in their treatment. It is evident that there is a very close resemblance between renal inadequacy and some forms of chronic Bright's disease without albuminuria. This resemblance is especially shown in the diminution of urea, the liability to inflammation of the serous membranes and the respiratory tract, in the tendency to succumb after operations, and in the simulation of myxœdema or pernicious anæmia. Indeed, Dr. Stewart of Philadelphia⁴ describes a form of Bright's disease, which he says is probably of common occurrence, in which not only is albumen absent from the urine and the nitrogenous excretion lessened, but cardio-vascular changes are absolutely undetectable. It differs, however, from the cases of renal inadequacy that I have seen, inasmuch as the pulse tension is high, eye changes are present, and casts can be detected in the urine. Dr. Fagge has drawn attention to the fact that the character of the pulse in renal inadequacy has not been recorded; while in the only case in which the report of a necropsy has been given the most that was said on examination of the kidneys was that they revealed no sign of disease but no microscopical examination was made.⁵

In the following case I had the opportunity of making a post-mortem examination.

CASE 1.—The patient, a married woman of sixty-three, had for twenty-six years been a chronic invalid, unable to work, and apt to catch cold on slight exposure. For fifteen or sixteen winters successively she had been laid aside for weeks or months together with bronchitis, pleurisy, or "congestion

of the lungs," and during the summer months was often confined to her bed from the same causes for five or six weeks consecutively. She remained well-nourished up to within four years of her death, but when I first saw her, in May, 1891, she was thin almost to emaciation, and her muscles were flabby and the skin harsh and dry. Her cheeks had a pinkish flush and her hair was coarse and scanty, but the thyroid was of average size and there was no puffiness of the eyelids or extremities. The tongue was red and clean, and the bowels were alternately relaxed and constipated. There were no eye changes, and the knee-jerks were slightly exaggerated. She had occasional frontal headaches with giddiness and suffered frequently from aching across the loins. The temperature varied between 97.2° and 98.6° F., and the pulse between 98 and 110; the latter was regular and of a character well shown in the appended tracing, which was taken at a 3 oz. pressure.



The heart's dulness was increased, the apex beat being best heard in the sixth interspace, four inches and a half to the left of the sternum. A presystolic murmur of medium intensity was present at the apex, and the other sounds were indistinct. She expectorated about six drachms of mucopurulent, frothy fluid. The chest was imperfectly resonant in every part. The breath sounds were harsh at both apices, and a few submucous râles and occasional rhonchi were heard here and there all over the lung area. Her urine, which was first systematically examined on ten occasions between May 20th and July 4th, 1892, averaged 38 oz. during the twenty-four hours, was of a specific gravity of 1008.5, and contained 188 grs. urea, the daily quantity of urea excreted varying very little from the average, though the amount of urine passed varied greatly on different days. It was faintly acid, and contained no casts and not even a trace of albumen. There was much soreness of the external genitals after micturition. As she ate but little I began treatment by prescribing a more liberal diet, but the onset of dyspeptic symptoms and diminution in the specific gravity of the urine necessitated a return to the old dietary. After giving her in turn acids, alkalies, bismuth, and other drugs without good effect, I tried daily massage, with gradually increasing diet. This was persisted in for nearly six weeks, because she insisted that it did her good, though the only effect noticeable to me was that she became slightly thinner, and the specific gravity of the urine gradually fell to 1006. On Aug. 1st, 1892, all treatment was stopped, but she continued to become progressively weaker; her temperature rose to between 99° and 100.5°, she expectorated greater quantities of frothy sputum, and the respirations became more frequent and laboured, though the chest sounds were not materially altered in character. She then became sleepless at night and on Aug. 18th insisted on getting out of bed for the relief of her breathing, and died shortly after she had returned to it.

Necropsy.—Ten and a half hours after death rigor mortis was slight. The blood coagulated very imperfectly, containing only a few small broken-down clots. The heart was somewhat soft and dilated, but not apparently hypertrophied; it weighed 13½ oz.; the valves were normal and no atheroma was present. Both pleuræ were firmly adherent, with old adhesions to the chest walls in all parts, except at the base of the right lung. The lungs were of a light, mottled colour, œdematous throughout, retaining their shape and giving out a frothy mucus when squeezed. The right lung was consolidated with chronic pneumonic products almost in its whole extent, with pus oozing from its tubes. The base of the upper lobe was also solid, and a few nodules were present here and there in the lung tissue for 1½ in. above. The kidneys weighed 3¾ oz. and 3½ oz.; they were smooth, and the capsules stripped off readily, except at one spot in each kidney to the extent of ¼ in. The kidney tissue was apparently healthy except at the seat of these patches, where it was lighter than elsewhere. Microscopical examination showed normal kidney structure throughout except in the areas beneath the adherent capsules, where there were changes indicative of old infarction. The liver was congested. The spleen was normal. The supra-renal

³ THE LANCET, Nov. 29th, 1879.

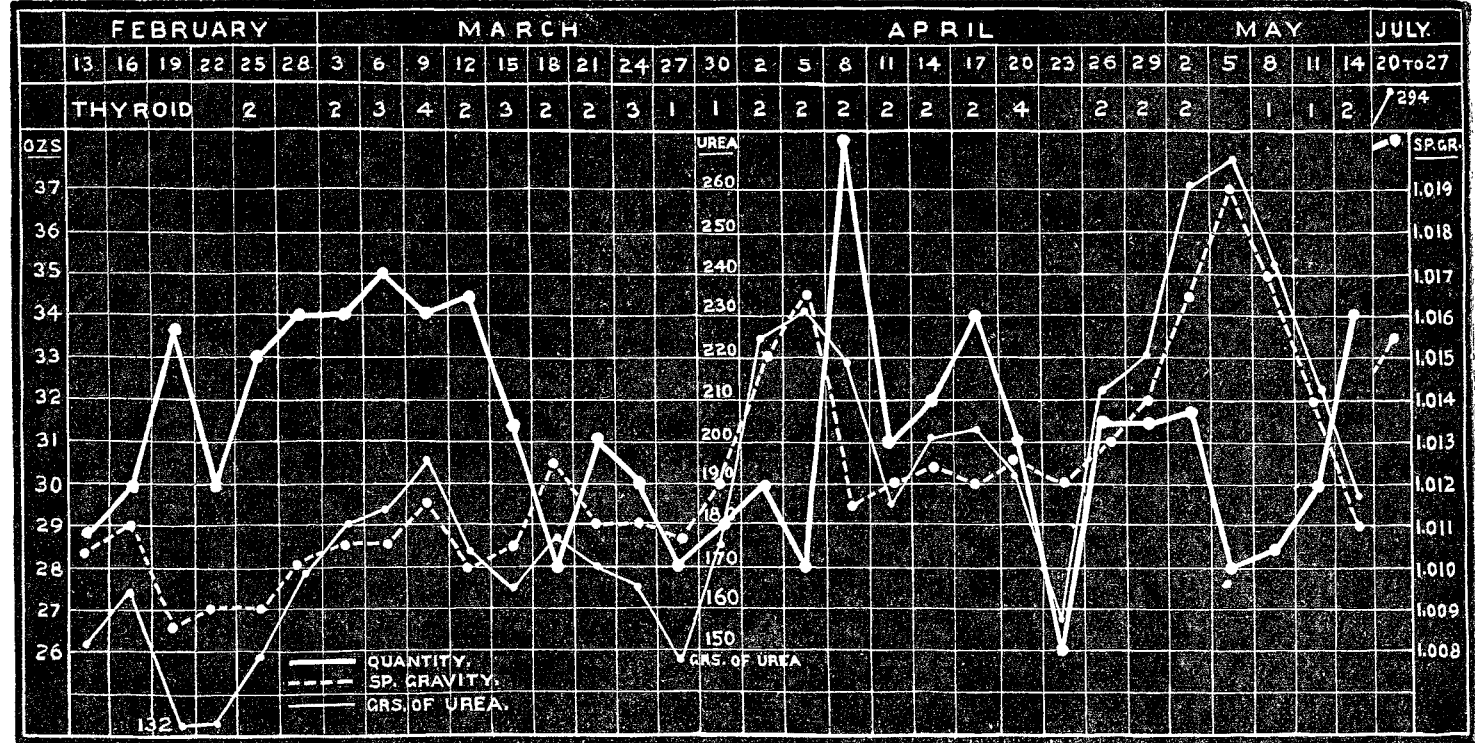
⁴ Brit. Med. Jour., Oct. 19th, 1893.

⁵ Ibid., 1893, p. 345.

capsule was normal on one side, the other side was not examined. The brain was normal. The thyroid weighed 10 drachms and appeared healthy.

CASE 2 —The next case of renal inadequacy occurred in a widow of fifty-seven, whom I first saw in December, 1891, and who imputed her complaint to the fatigue of nursing her husband during his last illness two years previously. She first came to me for bronchial catarrh, which afterwards developed into mild bronchitis. She said she had been subject to similar illnesses since her husband's death. She had never had pleurisy, but had suffered from rheumatic fever eighteen years before. I saw her on several occasions during the next two years, and my note-book contains a record of frequently recurring coughs, bronchial catarrhs and mild forms of influenza, pleurisy, bronchitis, and pneumonia. She was acutely sensitive to draughts, and any exposure to sudden change of temperature during the winter was almost inevitably followed by an illness of several weeks' duration. I was particularly struck with the smallness of her appetite, and found on measurement that her average daily food in the summer of 1892 was represented by 12 oz. of milk, 2 oz. of French beans, 1 oz. of meat, one thin slice of bread and butter, and a teacupful of milk pudding, with 10 oz. of additional liquid in the form of tea or water. In October it was 10 oz. of milk, 1½ oz. biscuits, 2 oz. of bread, 3¾ oz. milk pudding, and one drachm of oatmeal. Notwithstanding the poorness of her dietary she did not

Digitalis could never be tolerated, though it improved the character of the pulse and increased the excretion of urine, without diminishing its specific gravity. I first began systematic observation of her urine on April 22nd, 1892, on which date the specific gravity was 1003. Between this and Aug. 15th the daily average of twenty-two observations was as follows: Quantity of urine 36½ oz., sp. gr. 1008·4; and the daily average excretion of urea, as the result of twelve observations by Russell and West's method, was 158·4 gr. It was faintly acid, of a pale colour, and its odour was aromatic; there was no sediment, casts, or albumen. Of a few specimens kept for three months, those of the lowest specific gravity remained clear, but gradually darkened in colour and became neutral and more aromatic in odour, while those of a specific gravity above 1008 became still darker, but after two or three weeks gradually became ammoniacal. Various methods of treatment were then successively adopted, frequent observation being made on the urine to test their efficacy. Among them were massage, Weir-Mitchell's treatment, diminution of nitrogenous food, increase of nitrogenous food, diminution of liquids, and increase of liquids, but in every case with a result that was either negative or absolutely harmful, and the patient became gradually weaker and able to eat less. At the beginning of February, 1893, she had been in bed for four months, too weak to sit up for longer than a few minutes consecutively, when I began treatment with thyroid broth.

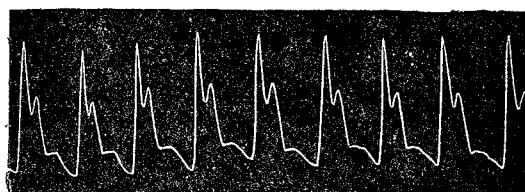


become thinner, but her muscles were flabby, and her habits and disposition were mild and vegetative. There was marked tenderness all over the body, and she shrank from the gentlest pressure. The knee-jerks were exaggerated. There were constant and obvious tremulous movements of the tongue and of the head and hands, resembling those of senile decrepitude, with occasional twitching of the face, and the speech was slow and tremulous. There was also slight deafness of both ears and occasional dimness of sight, but the ophthalmoscope showed no eye changes. The skin was harsh, there was slight oedema of the ankles, and a dark rim was present under the eyes. The thyroid was apparently of small size. She did not sleep well, awaking every two or three hours during the night. The only pain she experienced was an aching across the loins, which was sometimes very severe, and occasional cramps in the arms and legs. During the winter there was always an occasional cough with expectoration of small quantities of purulent sputum, while submucous râles were present here and there in the chest. The percussion note at the right apex was never good. The pulse was 88, almost water hammer in character. An indistinct systolic murmur was to be heard at the base, with an accentuated second sound, and a presystolic murmur at the apex, and on some occasions a soft systolic murmur was also to be distinguished. She complained greatly of palpitation of the heart, which was always relieved by a few five-minim doses of tincture of strophanthus.

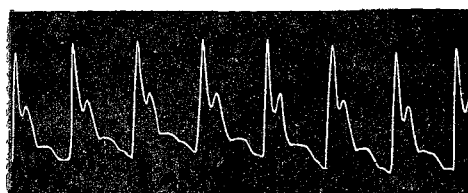
Fresh sheep's thyroids were pounded and the raw scrapings made into a broth at a temperature of 100°. This was given her in doses varying from two to six thyroids a week.

The effect on the urine during the first three months of this treatment is shown in the chart. It will be seen that, while the quantity of urine had not increased, the specific gravity had tended to rise, while the resultant of these two factors was shown in an unmistakable increase in the output of urea. The urine was tested daily for albumen, and from three to six times a week a quantitative estimation of the amount of urea was carried out by the nitrogen method. A daily record was also kept of the pulse-rate and of the temperature; but owing to the fact that in the chart the average of each consecutive three days has been recorded, the amount of urea has been roughly calculated by dividing the number of ounces of urine by half the last two figures of the specific gravity. In this way probably a more correct resultant is given than if the somewhat irregular observations were put down. Neither the temperature nor the pulse-rate has been included, for, while the former varied between 97·6° and 100·2°, and the latter between 88 and 152, the variations were so irregular as to render their record valueless. The irregular variations were, doubtless, mostly due to the mild form of pneumonia from which the patient was suffering. An inspection of the pulse-tracings shows a gradual and progressive improvement in the condition of the pulse during the time in which the record was

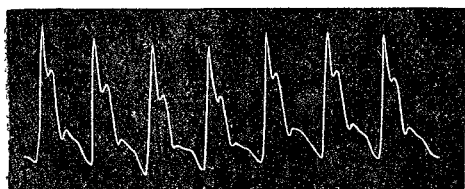
taken; but a tracing taken afterwards (Sept. 7th) shows a marked increase in tension. Indeed, the tension is so much greater that when it is taken in conjunction with the fact that two months ago a trace of albumen was for the first time detected with nitric acid in the urine it might lead one to suppose that the case is merging into one of Bright's disease. But against this view is the fact that observations of the quantity and specific gravity of the urine made subsequent to the days indicated in the chart show a considerable improvement in both quantity and density of the urine. The result of one such series of observations, made in July, has been appended to the chart. Still more satisfactory is the improvement in the general condition of the patient herself. This improvement set in from the commencement of the thyroid treatment and has been slow but continuous. In the middle of May, 1893, she was able to leave her bed, and on Sept. 10th she reported that she "was able to walk a mile and to eat more than she had done since her husband's death." At the end of January, 1894, when she was shown at a meeting of the Reading Pathological Society, she said she had never felt better in her life. She was much stronger, and though she did not



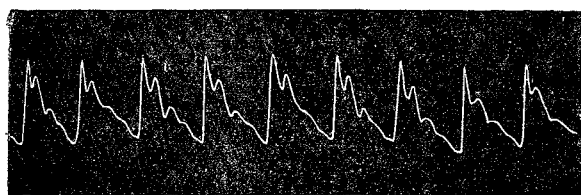
March 1st.—Three ounces.



April 20th.—Three ounces.



May 15th.—Three ounces.



September 7th.—Three ounces.

yet venture to walk out at night or in inclement weather, she had been free from illness since she left her bed nine months before. She is still slightly tremulous, but the heart dulness is no longer increased; the apex beat is normally situated, no murmur can be heard, and there is no accentuation or prolongation of cardiac sounds. The lumbar aching, the cramps, and genital soreness have also disappeared, and the specific gravity of the urine is 1021, and it contains no casts nor albumen.

I have also made irregular and imperfect observations on the effect of the thyroid treatment in the cases of three other patients whose urine was of low specific gravity and small in quantity. Two of these I believe to be instances of renal inadequacy, for their arterial tension was low, while their urine, when tested, has contained no albumen. The effect of thyroid feeding in both of these cases has been to slightly heighten the tension of their pulses and to increase the specific gravity of their urine, without diminishing the quantity excreted, and to improve their general health; but, though in one of these cases, as in those detailed above, the thyroids were given in large quantity without inducing unpleasant symptoms, in the other the results must be regarded as inconclusive owing to the insistance of the patient that she could not tolerate the treatment. After taking thyroid

extract for a few days she declared it caused such a feeling of prostration that she had to give it up, and after I had again persuaded her to try it in smaller doses she again, and finally, abandoned the treatment. Unlike the other two patients, she was of a markedly neurotic temperament. In the fourth instance in which thyroid extract was given, though the pulse was not hard, the urine contained granular casts, and when tested invariably showed traces of albumen. Though the extract was given daily for nearly two months, it appeared to have no influence upon the excretion of urea, nor upon the condition of the patient herself. I have not yet tried the remedy in other cases of Bright's disease. But in another disease in which there was defective elimination of urea the extract appeared to be not only unsuccessful, but positively dangerous. This was a case of undoubted diabetes insipidus, under Dr. Abram. The disease was upwards of four years in duration, and the daily average of urine amounted to between thirteen and fourteen pints, while the specific gravity varied between 1000 and 1002, and never contained even a trace of albumen. On the morning of Jan. 4th the extract of one-third of a sheep's thyroid was given, with the result that in the evening she had eclamptic seizures, and retched and vomited frequently. On examination of the urine it was found that the specific gravity had fallen from 1002 to 1000, while its quantity had diminished by one-half. A quantitative estimation of the urea was not made before giving the thyroid extract; but on using the nitrogen test afterwards the amount of gas evolved was so small as to render calculation of the equivalent urea impossible by ordinary methods. The next day the specific gravity had again risen to 1002; but the urine contained less than 0.03 per cent. of urea, and its quantity was still diminished by one-half. The urine continued of this character for ten days, the patient meanwhile being in a drowsy condition but free from sickness or eclampsia. The heart in this case was apparently of normal size, and the pulse was rather soft than hard.

Though the above observations of the effect of the administration of sheep's thyroids in renal inadequacy were made from February to May, 1893, the first to call attention to the fact that the excretion of urea is increased by the use of this remedy were Dr. Ord and Mr. White, in a paper entitled "Clinical Remarks on Certain Changes observed in the Urine in Myxœdema after the Administration of Glycerine Extract of Thyroid Gland."⁶ The same fact was also subsequently pointed out by Dr. Napier in a paper on "Diuresis and Increased Excretion of Urea in the Thyroid Treatment of Myxœdema."⁷

Since this paper was written the thyroid extract has been given in another case of chronic Bright's disease, with the result that after one month's treatment the specific gravity of the urine, which had remained persistently at or under 1010 for two years, has risen rapidly to 1017, while the pulse tension has diminished.

TRAUMATIC PANCREATIC EFFUSION INTO THE LESSER PERITONEAL CAVITY; ASPIRATION; RECOVERY.

By J. LYNN THOMAS, F.R.C.S. ENG.

I HAVE adopted Mr. Jordan Lloyd's explanation of the pathology of one of the conditions known by the comprehensive term "pancreatic cyst," as I think it is the correct one for cases similar to the one under consideration. I followed up the subject of my case for eighteen months, but a few days ago I discovered that the street he lived in had been demolished, and consequently I am obliged to call the result a "recovery" and not a "cure," as the after-history of reputed cures of cases of a similar nature has clearly demonstrated a recurrence of the disease within a few months, and I think it is very desirable that such cases should be followed up for years, if possible, in order that our knowledge should be more trustworthy with regard to prognosis. The present case is of particular interest as an illustration of a method of treatment which has been singularly, if not uniformly, unsuccessful in other cases but this one, and I wish to draw attention to the age of this patient as a

⁶ Ibid., July 29th, 1893.

⁷ THE LANCET, Sept. 30th, 1893.