Date.	Quantity of urine per 24 hrs. in oz.	Sp. gr.	Quantity of sugar per fluid ounce in grs.	Quantity of sugar per 24 hrs. in grs.
Dec. 21st ...	90 ...	1039 ...	31 $\frac{1}{4}$...	2812
22nd ...	100 ...	1038 ...	22 $\frac{1}{2}$...	2250
23rd ...	100 ...	1035 ...	24 ...	2400
24th ...	110 ...	1033 ...	19 $\frac{3}{4}$...	2172
25th ...	110 ...	1025 ...	20 ...	2200
26th ...	100 ...	1029 ...	24 ...	2400
27th ...	110 ...	1030 ...	25 $\frac{3}{4}$...	2832
28th ...	115 ...	1030 ...	22 $\frac{1}{2}$...	2587
29th ...	120 ...	1034 ...	19 ...	2280
30th ...	115 ...	1032 ...	20 $\frac{1}{2}$...	2357
31st ...	110 ...	1039 ...	28 $\frac{3}{4}$...	3162
Jan. 1st ...	120 ...	1030 ...	25 $\frac{3}{4}$...	3090
2nd ...	120 ...	1031 ...	19 $\frac{3}{4}$...	2370
3rd ...	110 ...	1033 ...	21 $\frac{1}{4}$...	2337
4th ...	110 ...	1037 ...	32 $\frac{3}{4}$...	3602
5th ...	120 ...	1034 ...	27 $\frac{3}{4}$...	3330
6th ...	110 ...	1035 ...	31 $\frac{1}{4}$...	3437
7th ...	110 ...	1037 ...	27 $\frac{3}{4}$...	3052
8th ...	120 ...	1037 ...	32 $\frac{3}{4}$...	3930

It will be seen from the above report that there was no marked effect either one way or the other observable upon the urine. What slight effect there was, was the reverse of improvement, the urine being higher in quantity, and the sugar larger in amount, towards the end of the period during which the ozonic ether was administered than at the commencement. The patient, as regards his general feelings, expressed himself as not perceiving much difference; if anything, he thought that he had been feeling a little more thirsty, and that his appetite was not so good.

I have come across several cases in private practice in which the ozonic ether has been tried. In none have I been able to learn that any benefit was produced. Indeed the fact of the patients coming to me may be taken as affording evidence that the result was not satisfactory. One patient whom I have recently been attending was glad that I proposed making known my experience, as he had been worried on all sides by this friend and that to try the new remedy for diabetes, as it was called. He took it for two months, and in speaking about it expressed himself in anything but friendly terms towards it. He had lost his appetite, he said, under its use, and I had to listen to a category of other evils that he was sure had been produced by it.

Dr. Richardson, the first prominent advocate of the peroxide of hydrogen as a therapeutic agent, has recently spoken about it in relation to diabetes, and what he has said agrees with the conclusion derivable from my own experience. He states that his first object in introducing the peroxide of hydrogen into medicine was to test it as a remedy for diabetes. After fairly trying it in eleven cases, he sums up: "I am obliged, with regret, candidly to state, that at this moment there is no proof that peroxide of hydrogen is of specific value in the treatment of diabetes." Dr. Richardson also alludes to the employment of ozonic ether in diabetes, but refers only to the experience of others, saying, "I have as yet no sufficient evidence of the value of the ethereal solution in diabetes to enable me to speak with authority."

At present I have only looked at the matter practically; but now let us look at it theoretically, and see what the alleged remedy is capable of doing towards oxidising the sugar that is being discharged,—for it is upon the ground of its oxidising influence, and not upon that of any dynamic effect, that its efficacy has been based. It must first of all be admitted that the peroxide of hydrogen can exert an oxidising influence over bodies that may escape being oxidised by the oxygen contained in the atmosphere. What I propose is, to allow, for the sake of argument, that the oxygen at disposal in the peroxide of hydrogen may contribute towards the oxidation of sugar; and, taking the amount administered, ascertain how far it can exert any material effect in diminishing the discharge of sugar from the system.

As an example, let it be supposed that we are dealing with the case of a patient who is passing eight pints of urine in the twenty-four hours charged to the extent of 40 grains to the fluid ounce with sugar; which, unless strict attention is paid to diet, is only a moderate representation. Eight pints of urine containing 40 grains of sugar to the ounce will give 6400 grains as the amount of sugar passed during the twenty-four hours. The composition of grape-

sugar is such ($C_{12}H_{12}O_{12}$) that the oxygen contained in it just suffices to oxidise and form water with the hydrogen; whilst the carbon, to be oxidised, must be supplied with oxygen from an external source. Now, as sugar contains 40 per cent. of carbon, it follows that in the 6400 grains estimated above as being discharged during the twenty-four hours, we shall have 2560 grains of carbon for oxidation. To convert this into carbonic acid will require 6826 grains of oxygen, which is equivalent in volume to 19,854 cubic inches. Thus, to bring about a disappearance of sugar from the urine by oxidation in our presumed case, 19,854 cubic inches of oxygen must be supplied by the oxidising agent administered. Let us next see how far the ozonic ether and aqueous solution of peroxide of hydrogen will contribute towards doing this.

The ozonic ether is stated by the manufacturer to contain 30 volumes of oxygen under the form of peroxide. It is usually administered in half-drachm doses; and, supposing 4 doses a day to be given, the oxygen for disposal introduced into the system would amount to just about 13 cubic inches. So, with the aqueous solution of peroxide of hydrogen. This is asserted to be charged with 10 volumes of oxygen, and the ordinary dose of it is a couple of drachms. Let us suppose, again, 4 doses a day to be given: these would contain rather over 17 cubic inches of the gas.

Here we have, then, a supply of, say, 13 cubic inches of available oxygen by our remedial agent in the one case, and rather over 17 cubic inches in the other, against 19,854 cubic inches required to oxidise the sugar escaping in our example drawn from an ordinary case of diabetes!!

Looked at from this point of view, to seek for any beneficial effect from the peroxide of hydrogen upon the ground on which it has been proposed as a remedial agent in diabetes is nothing less than a *reductio ad absurdum*. The amount of oxygen supplied stands, it may be said, in a ludicrous position by the side of the amount of oxygen required for the oxidation of the sugar discharged.

Grosvenor-street, March, 1869.

ON THE PHILOSOPHY OF COUNTER-IRRITATION AS APPLIED IN PRACTICE.

By JOHN G. FRENCH, F.R.C.S.,
SURGEON TO ST. JAMES'S INFIRMARY.

I do not think that there is anything more easily explained in the remedial art than the *modus operandi* of counter-irritation, although I agree with Dr. Anstie that the principle of action is misunderstood, and that therefore erroneous ideas and practice are entailed upon it.

It is upon the comprehension of the principle alone to which I desire to direct attention, for I must premise that, as a remedy of great efficacy, its claim is as well established by experience as any other. As a general illustration of the subject, it may be said that a disease of deep seat and long standing fails to show the least improvement under what are deemed the most favourable circumstances, as of rest, proper diet, comfortable temperature, pure air, agreeable occupation of mind,—even, apparently, of good general health.

If, under these circumstances, an injury is inflicted upon the skin, as by a burn (actual cautery), or by caustic potass, we can yet absolutely rely upon the separation of the destroyed skin from the living, and afterwards upon the healing process being carried on until cicatrisation is complete. I think the explanation is this—namely, that however *reparation* may fail in the original disease, it may be still be expected with certainty in the recent injury; and that whatever force and action are comprised in that term will be carried on until that reparation is complete, which, in the case I have put, will be for a considerable time. During this time the original morbid action is observed first to diminish, as rendered evident by the diminution of inflammatory products and pain, and by the gradual restoration of structures morbidly altered to a natural condition.

Perhaps the more appropriate term by which all this can be expressed, and which is sought for by Dr. Anstie, is "diversion," instead of "counter-irritation;" at least it has the advantage of being the shorter term. But to alter names is so inconvenient, that I think it far more important to acquire distinct perception of the truth, value, and meaning of terms before altering them.

Now I believe that all the measures which are comprised in the term counter-irritation consist in the infliction of an injury; and the beneficial result, when obtained, is effected by the corresponding *diversion caused by the reparative process of that injury*, whatever it may be. So that the point to study is what is the reparative process peculiar to each remedial injury; and then to suit the remedy to the malady.

In the term "remedial injury" everything used as counter-irritant must be included, not omitting the mildest rubefacient.

When success attends the remedy, which I selected as an illustration, I assume that those forces,—namely of reparation—which are employed with energy upon the recent injury, act by direct diversion from those forces which maintained the old disease: that bloodvessels there so long distended had become too feeble to contract and regain tone; but now obtain repose, and consequent vigour, by the diversion thus made in their favour, and that thus the cure is effected.

If the use of counter-irritation prove unsuccessful, it would argue to a certain extent the want of judgment with which it was prescribed—an argument applicable to remedies generally, for it is certain that if remedies of any description whatever gain general credit, they become unduly prescribed, of which fact, as an illustration, none is more remarkable than venesection, which had become so universally used that labouring men adopted it as a means of preserving health;—to use their own language, "always being bled spring and fall" with that object. Now, however, it has been generally abandoned, and would hardly be prescribed by anybody who could not from it confidently expect a very immediate, remarkable, and lasting benefit. It is no doubt just as good a remedy as ever, but is now only prescribed with more care and discrimination.

Great Marlborough-street, March, 1869.

FATAL CASE OF POISONING BY OIL OF TURPENTINE.

By PHILIP MIALL, Esq.,

SURGEON TO THE BRADFORD INFIRMARY.

As there is not a single case of poisoning by oil of turpentine on record, perhaps the following notes may be interesting to the profession:—

On the night of Jan. 8th I was sent for to see an infant, aged fourteen weeks, supposed to have swallowed oil of turpentine. On arriving, at a quarter to twelve P.M., I found it comatose, pale, with extremely cold surface, contracted pupils, slow and irregular breathing (about three times in the minute); pulse quick, small, compressible, and almost imperceptible, but regular; and regular, feeble action of the heart. Auscultation disclosed mucous râles, and minute crepitation throughout both lungs. There was no excoriation on the face, lips, or mouth, and the mucous membrane was pale and cold. A strong terebinthinate odour came from the mouth, and the pillow on which the child had lain showed a large moist spot, smelling strongly of turpentine.

I tried artificial respiration by the Marshall Hall method for a quarter of an hour, without improvement; and as emetics were out of the question, the child not being able to swallow, and as the stomach-pump, even if it could be applied to so young a child, could be expected to do little good, the poison having been taken nearly three hours before, I therefore gave up the patient as being in a hopeless condition.

According to the mother's account the infant had been left asleep, and well, at nine P.M. An hour afterwards she

found it insensible, cold, and slightly convulsed. About half-past nine it was noticed by the grandmother to be cold, but, her sight being defective, she observed nothing further, and raised no alarm. A brother of eight years of age had been alone in the room with the infant, and it was ascertained that he was previously in the habit of drinking from medicinal bottles, and of inducing other children to do the same. A six-ounce bottle was found on the table without a cork, containing half an ounce of oil of turpentine, and the mother stated that before the accident it contained about twice that quantity. After being discovered, the infant was well enough to swallow a little milk. After I had gone, it was wrapped in warm blankets, as I had directed, and it remained in the same state until between three or four o'clock the next morning, when it is stated to have rallied a little and taken some milk. It soon became comatose again, and died at a quarter to twelve, nearly fifteen hours after taking the poison.

An inquest was held, but no medical evidence was taken, and no post-mortem examination could be obtained. I vaccinated the patient on the day of the accident, so that I know it to have been in good health at the time.

Feb. 9th, 1869.

A Mirror

OF THE PRACTICE OF MEDICINE AND SURGERY IN THE HOSPITALS OF LONDON.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum, tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.

A CASE OF SYPHILITIC DISEASE OF THE NERVOUS SYSTEM.

(Under the care of Dr. RAMSKILL.)

WE have watched with much interest the remarkable improvement under treatment of a man, aged forty, who came under Dr. Ramskill's care in January, 1868. He was a potman, sallow-faced, and unhealthy-looking, and he walked into the room with a feeble and staggering gait. There was external strabismus of the left eye, ptosis of the left lid, and occasional twitching of the facial muscles of the same side. These were the points first noticeable, and this was in a few words the history which Dr. Buzzard gathered of him:—During the past eight months he has had four fits. The first in bed early in the morning: he lost his senses; was much convulsed; bit his tongue; the attack lasting for from fifteen to twenty minutes. The next two fits, of the same character, occurred one week after the first. The fourth took place a week after Christmas. Four months ago, he says, his left eye gradually turned outwards, and he saw double. Fourteen days ago he complained of great pain at top of head, and could not sleep for three nights. His left eye closed. His wife says he became very stupid, lost his memory, and has been getting gradually worse, so that now he is almost imbecile, requiring even to be dressed. He is deaf with the left ear, and, so far as can be gathered, the sight of the left eye is defective; its pupil is dilated and sluggish. He can whistle, and can close both eyes equally well, but there is ptosis of the left eyelid. His appetite is bad, and he is long in eating his food, which is retained for some time in his mouth ere he swallows it. The left arm is wasted to the elbow, and painful.

For a month or two after his first visit to the hospital it was not possible to obtain reliable information from him as regards syphilitic infection, which was strongly suspected. His mind was so vacuous that he only gave contradictory answers. However, he was at once treated upon this view. Ten grains of iodide of potassium were given three times