Original Articles.

AN ABUSED AND NEGLECTED REMEDY.

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THE history of every novelty, innovation or advance in the line of therapeutic measures, is marked and punctuated by a succession of vicissitudes and experiences so uniformly resembling each other, in general features, that a student of medical history might forecast them, in any given case, with greater accuracy than is shown in the average predictions of the Signal Service Bureau.

First, there is the original enthusiast, who, sooner or later, multiplies,—possibly by the process of fissiparism,—into a more or less respectable corporal's guard of camp-followers, who soon succeed in earning the slangy modern title of "cranks." Goaded by opposition and unkind criticism, they take refuge in an almost vituperative over-statement of facts, and over-estimate of possibilities, call down upon themselves merited ridicule and persecution, and this, frequently culminates in abuse and ultimate professional ostracism. This is much less true at the present day than at any former time in the history of medicine. Never was the profession so ready to greet new assumptions with respectful tolerance, and to give them ample opportunity to demonstrate their worth or worthlessness, as now. Instance the fairly epidemic furor with which Bergeon's unnatural and irrational treatment of phthisis swept over the country. Instance, also, the stenocarpine faze.

Again, each new theory, vaunted specific and therapeutic hobby suffers its period of decadence, following a brief heyday of novel popularity, and regardless of its merits or want of merit, its falls into desuetude, if not into contempt. If its claims be based on chemistry, common sense, or clinical experience, it eventually emerges from its undeserved banishment, and is sooner or later revived or re-discovered; after which old assumptions are revamped, fresh experiments are conducted, and, finally, some renowned clinician or acknowledged authority sets the seal of success on it, forever, by adopting it as his own god-child.

This line of thought was suggested by the discussion of the use of oxygen gas in pneumonia, by members of the New York State Medical Society, recently reported in these columns. Of all the therapeutic measures now being brought into more general use, oxygen is certainly one of the most promising. At the same time, there is not a remedy in the whole materia medica which has had to run the gauntlet of so much direct and indirect abuse, or of so much professional bungling.

First, it has been hawked by quacks, until, in many professional minds, its very name smacks of charlatanism.

It has been, and still is, used by honest and well-meaning physicians, in such an inaccurate and unscientific manner, that it is fairly astonishing when any but negative, unsatisfactory, or even disastrous results are reported.

As an example of the first, it is only necessary to instance any one of several firms, which, for years, have advertised as extensively as any of the leading nostrum concerns of the country. Dispensing as they do an almost inert and quite inexpensive solution of therapeutic nothings, at conscienceless prices; cunningly and unstintedly prostituting the columns of

the religious press; these parties are unscrupulous in assertion, and hesitate at nothing which will advance their prime object,—the wringing of money from credulous dupes, who are always quite willing to be deluded by gilded and glib-tongued sophistry.

To illustrate what I mean by inaccurate and unscientific manner of exhibition, it will be sufficient to merely advert to the average methods of administration in vogue, even among practitioners of eminence, and those who are vaguely conscious of its presumed value, and conscientious in their efforts.

Suppose it is a critical case of pneumonia,—the patient panting for breath, cyanosis increasing, the non-aerated blood constantly growing darker and more sluggish, every moment adding to the suffering of the patient and the consternation of the friends. The medical attendant realizing that oxygen would meet the emergency, hurriedly sends to the nearest calcium light company for a "tank" of the gas. It arrives, looking very much like a sheet-iron hot-water reservoir. Of its purity or impurity, or the per cent. of chlorine present, he makes no question. Nor has he ever read up, even the meagre literature of the subject, much less questioned as to the devitalizing effect of compression, on even the purest gas. Unaccustomed to the technique of oxygen apparatus, he is puzzled to know how to bring the vitalizing gas into contact with the carbonized blood of his semi-asphyxiated patient. However, he turns on the gas, (at a pressure of two hundred or three hundred pounds to the square inch), liberating five or twenty gallons, he hardly knows which, and watches the results. Perhaps there is a measure of relief; but more likely the result is negative, if not positively damaging. What other remedy could withstand such hap-hazard manipulation, amounting to mere guess-work!

The therapeutic employment of oxygen gas is no longer of questionable utility. It is gradually commanding attention in the highest professional circles, and is being recognized as a desideratum in numerous conditions which have hitherto proved tedious or wholly unmanageable. The chief sources of hindrance to its more general employment have been the professional carelessness referred to, and the general lack of facilities for procuring a prompt supply of the agent, in convenient form, and of a quality sufficiently pure for prolonged clinical exhibition. The commercial gas available is not fit for medical purposes, on account of chlorine and other impurities, which the manufacturers find it difficult to remove, and which are not particularly objectionable in the production of oxy-hydrogen light, for which it is chiefly used.

But it is not necessary to use impure or questionable gas. The process for evolving pure oxygen is not complicated, and may be conducted without the aid of expensive apparatus by those who are not particularly apt in chemical manipulation. Familiar as it is, perhaps its concise repetition may assist some experimenters who have never attempted it, or whose recollections of the laboratory have been dimmed by time.

The best formula, for practical purposes, is that suggested by Fresenius:

R	P. Potass. chlorat.	lbs. iv.
	P. Manganesi dioxid.	lbs. i.
	P. Ferri carb. prec.	3ij.

M.

S. To be well mixed and triturated, avoiding violent friction, lest an explosion be produced. (With reasonable care, the liability to this accident is very slight.) The prepared material should be thor-

oughly desiccated by being exposed to moderate heat in an open oven, or by means of a chemical drying chamber. Store in any receptacle which will protect it from moisture until wanted for use.

The best retorts are made of either brass or iron. Copper oxidizes more rapidly, besides requiring an increased degree of heat. The conical shape, with broad bottom, is much superior to the old-fashioned flat or pear-shape, the evolution of gas from the latter being tumultuous, and less under control. For making more than thirty or forty gallons at an effort, the cylindrical form of retort is still more preferable. With the latter form, the process is entirely under control.

A portable form of apparatus is now being made in New York which uses cylindrical retorts of small size made from brass, and connected by means of a nipple and friction-joint. An important improvement has also been made in the form of wash-bottle tube. It consists in expanding the lower or submerged end of the tube into a hollow bulb having a number of minute perforations, through which the gas is forced to escape in exceedingly fine bubbles, thus insuring its more perfect contact with the washing or purifying fluid.

I have used this unique and ingenious device in my practice for some months with the best of satisfaction. It renders the gas available hereafter to a large number of practitioners who would forego its use, rather than cumber themselves with the larger and more expensive apparatus. Its capacity, at each operation, is sufficient for any ordinary emergency, and the process can be repeated every fifteen minutes, consecutively if desired. Compact as it is, the gas evolved is, if anything, more perfectly purified than is ordinarily accomplished by the usual laboratory appliances. It is also cooled and desiccated by being passed through a deep layer of anhydrous calcium chloride. It can thus be administered to the patient at a temperature approaching the freezing point, if desired. This gives all the effect of compressed gas, with none of its drawbacks.

A word about compressed gas. In my experience, it is decidedly deteriorated by the process of compressing it. Whether the change is one of molecular arrangement, or what it is, probably cannot be accurately determined. Whatever it is, the compressed gas is practically or partially devitalized. In comparison with nascent or fresh-made and uncompressed gas, it is, to use a commercial expression, not worth half-price. No physician who has used only commercial, compressed oxygen gas can give an intelligent opinion as to the real merits of the treatment. There is more difference between the two conditions of the gas than between fluid extracts made from roots and barks, inert or changed from age, and those prepared from freshly-gathered material.

Professor Dewar, of the Royal Institution, London, has announced the possibility of preparing solid oxygen. The experiment, although ingenious, is, for the above reason, without clinical significance.

Beddoes was the first oxygen "crank." Hill was a faithful disciple, but lacked originality. Both were over-enthusiastic, and, considering the crude appliances with which they were obliged to work, and the cruder state of medical science at the time, it is almost incredible that they should have avoided prosecution for malpractice.

Fourcroy, who was a contemporary of Priestley and Lavoisier, was the first scientist to reduce the experiments with oxygen, as a remedy, to something

like system. His eminence, both as chemist and physician, give some weight to his conclusions, which are thus tersely stated: He asserts that he "had witnessed good effects from inhalations of oxygen in the chlorosis of young girls, in the scrofulous affections of children, in humid and chronic asthma, in abdominal obstructions, in hypochondria, in commencing rachitis, and in those obstinate dyspepsias accompanied by pallor of the skin and general debility."

To this original synopsis of the therapeutic promise of this agent, the desultory experimentation of the past three-quarters of a century has added little that is vitally important.

In it we have a key to vaster and more important possibilities than most of us have yet dreamed of. In a future paper I may venture to report some individual experiences I had during the last few years, which emphatically corroborate all that is asserted by the eminent French physicians.

A CASE OF RETINITIS PIGMENTOSA TREATED ELECTRICALLY.¹

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I AM well aware that to report the result of the treatment of a single case of any disease, and to draw deductions therefrom as to the efficacy of the method of treatment, is a rash proceeding, and I would not occupy the time of the Society by reporting this case except for the fact that it is one of several cases reported at the last meeting of this Society by Dr. Hasket Derby in a paper which excited considerable discussion at that time.

The patient was a woman, thirty-three years of age. She had myopia of 1.50 diopters in each eye, and had worn correcting lenses since she was seventeen years old. Her parents were not relatives. She was the only child of her father's first marriage, and had several half-brothers and sisters who had never had any trouble with their eyes. Several members of her mother's family were "near-sighted."

When first seen by me, on the 14th of April, 1886, she had noticed an increasing failure of vision for the previous three years, which had increased very rapidly in the three months previous to her visit to me. Her night-blindness had recently become so great that she could no longer go on the street after night-fall with safety. The ophthalmoscope showed a considerable number of the characteristic star-shaped spots of retinitis pigmentosa in the periphery of the fundus in each eye. Her vision was: right, $\frac{1}{2}$; left, $\frac{1}{2}$.

The field of vision did not extend over 20° in any meridian in either eye.

The only treatment employed in this case was the continuous electrical current. The positive pole was placed upon the closed eyelid, and the negative pole on the brow or temple. The strength of the current used was only such as could be comfortably borne, and has generally been derived from four or six cells of a Störer's battery.

The current has been passed in this manner for five minutes at a time at intervals of several days.

For the last ten months there has been a uniform

¹ Read before the American Ophthalmological Society, 1887.