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I.

Remarks on the Uncertainty of the Doses of Medicines when regu- lated by Drops.

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EXACTNESS in the exhibition of minute doses of medicines, is of the first importance. When these are given in the liquid form, they are usually measured by drops. Frequent disappointments in the effect of remedies thus administered, led me to examine the proportion which drops bear to the established units in the measure of fluids, or minims. For greater convenience in explanation, the fluidrachm, of the capacity of sixty minims, was the measure employed.

As the results were unexpected and somewhat surprising, they may be worthy of being communicated to you. They are not uniform, and perhaps might not again be exactly reached on a repetition of the same experiments. Indeed the only conclusion to be drawn from them,

is that the size of drops is indeterminate, and that remedies thus administered are given in unknown and varying quantities.

Six phials of different capacity, from $3\frac{1}{2}$ to $3\frac{1}{4}$, and differing in the diameter of the mouth, in the breadth and in the thickness of the lip, were employed. They were selected of this size, as being most like those ordinarily in use in the chambers of the sick. The experiments were made with six fluids differing in specific gravity and in viscosity. The following table contains the results of the various trials.

Under the number denoting the phial are ranged in a column figures showing the number of drops of the different fluids, which were requisite to fill the measure of a fluidrachm. When two numbers are given they denote the drops thus required, when made to fall from different sides of the mouth of the same phial. The temperature of the liquids was 60 deg. Fahr.

The number of drops to the fluidrachm, of	Phial 1. 3 1 $\frac{3}{4}$	2. 3 1 $\frac{1}{2}$	3. 3 i.	4. 3 vii.	5. 3 iv.	6. 3 iv.
Water, the phial $\frac{1}{2}$ full.	66	42-62	31-35	90	66-71	58-71
Water, phial full.	73	35-66	44-52	75	70	62
Spirit. Ætheris Nitros.	140	95-144	86	137	79-150	107
Tinct. Camph. Opiat.	132	94-132	82	136	75-143	124
Tinct. Opii.	120	80-129	76	137	109	112
Acet. Opii.	112	95-114	110-126	112	117-131	123
Liq. Potass. Arsenit.	63	44-56	88-95	90	53-80	93

Lest it might appear that phials of uncommon and enormous construction had been employed, the three last mentioned liquids were dropped out of the phials in which they were furnished by the apothecary, and with these results : 52 drops of the arsenical solution were necessary to fill a f3 ; 140 drops of laudanum ; and 163 drops of the vinegar of opium.

The size of the drops did not appear to depend at all upon the fullness of the phial ; in some trials more drops, and in others less, went to fill the f3 from a full phial, than from one half full.

The specific gravity of the liquid greatly controls the size of its drops ; while in the trial with phial No. 1 the f3 contained 66 drops of water, and 63 of the arsenical solution, it contained 140 drops of the spirit of nitrous ether. And in phial No. 5, the numbers were 70 of water, 80 of arsenical solution, and 150 of nitrous ether.

This cause of difference in the size of drops, and in the doses of powerful remedies, however, as it is unvarying, may be estimated,

and needs not to afford any embarrassment.

The greatest source of discrepancy is undefined and immeasurable ; viz. the varieties, often minute and inappreciable, in the thickness of the phial, and in the breadth and form of its lip. It is unnecessary to repeat the detail contained in the table above : it will be sufficient to adduce the instance of laudanum. While one phial yielded 76 drops to the fluidrachm, another gave 137, and a third 140. More than this,—in phial No. 2, the laudanum, dropped from one side of the mouth, went in 80 drops to the f3 ; while the same quantity issued in 129 drops from the opposite side. Now a f3 of laudanum contains 3 $\frac{3}{4}$ grs. of opium ; a prescription, therefore, of 20 drops may at one time administer 0.53 of a gr. of opium, and at another 0.98 of a gr.

When it is considered that these facts apply also to the administration of prussic acid, of croton oil, and other remedies requiring exactness in their adaptation, one must be sensible how important it is to change the loose

method of measuring by drops, for the accurate standard of the minim glass.

II.

From the London Med. Repository.

Remarks on the Internal Exhibition of the Acetate of Lead, chiefly with the View of determining to what Extent it may be safely administered in the Cure of Diseases, especially in Uterine Hæmorrhages.

By WILLIAM LAIDLAW, Esq., Surgeon.

VERY opposite opinions are entertained by individuals, equally distinguished for their candor and erudition, relative to the internal administration of the acetate of lead; some considering such use of it as a display of unqualified rashness; while others conceive it to be an invaluable remedy in many dangerous diseases; and that its prudent exhibition is not only justifiable, but highly laudable.

That the incautious use of the acetate of lead will produce deleterious effects, would be equally idle and uncandid to deny. The noted colica pictonum, the scourge of so many, both at home and abroad, was, at one time, indeed, attributed to other causes; but ever since the interesting investigations of Sir George Baker on the subject, it has been universally allowed to be the effect of its gradual introduction into the system; and, perhaps, it is this incontrovertible fact that has prejudiced so many against this invaluable remedy. But the production of so baneful a complaint, by the gradual introduction of this salt into the system, is not a conclusive proof, or rather is no

proof at all, that its judicious use may not effect salutary results.

Were this not admitted, then arsenic, the oxymuriate of mercury, and many other articles of the materia medica, with equal, nay, with greater propriety, might be discarded.

Agreeing, then, with those who conceive that the judicious exhibition of this remedy is not only justifiable, but highly praiseworthy, the question to determine will be, what is the judicious use of it?

By its judicious use, I understand the administration of it in such quantities as shall most speedily, and therefore, most safely, cure the disease for which it is employed.

I have said most speedily, and therefore most safely, because I am persuaded that the latter object will be attained in the proportion that the former is accomplished. Paralysis and convulsions, which are sometimes the effects of the insidious introduction of this salt, will, it is presumed, be most dreaded in its internal exhibition; and colica pictonum, its more usual attendant, classed, in point of importance, only as second to these; because the latter is much more under the control of the healing art than the former. But the administration of it in small doses, such as half a grain, in uterine hæmorrhage, does not appear to be the proportion best calculated, most speedily, to effect a cure. And as such a mode of exhibition, from the slow operation on the disease, will ultimately require a greater quantity to be used than if the doses had been larger, so it resembles more the insidious manner of its introduction to manufactories, and