

## Weights and Measures.

By D. B. Dorr.

The question of introducing the metric system of weights and measures into the Pharmacopœia is now prominently brought forward, and deserves full discussion and consideration. The introduction of the metric system is recommended on two distinct grounds; first, that of its essential superiority to the British code, and secondly, on what may be called the cosmopolitan ground, that because other nations have adopted the system, it is convenient that we should do so also.

It is too much the fashion to speak as if the British system were everything that is bad, and the metric everything that is good. It may readily be admitted that the adoption of the metric in place of the avoirdupois system would be an advantage, as it would greatly simplify calculations, yet its introduction would have other drawbacks besides the trouble involved in making the change. I remember Sir Frederick Bramwell, from an engineer's point of view, objecting to the decimal system, because it did not conveniently lend itself to sub-division by halves. No doubt there is something in that objection. By the unfortunate fad of fixing the size of the metre from a proportion of the earth's meridian, a standard has been got which is inconveniently long. As Professor Tait says:—"Any cloth merchant will tell you that." Similarly, the kilogramme and litre are inconveniently large. To many minds, also, the nomenclature, however systematic, is clumsy and long-winded. All our English names for weights and measures are short, mostly monosyllabic, unlike "cubic centimetre," while the very similarity of such names as decigramme and dekagramme suggests confusion. It also seems worthy of note, that it is easier for a man to bear in mind such a quantity as 3 lb. 13 ozs. than, say, 1725 grammes (see U. S. Pharmacopœia). But the chief weakness of the metric system is just in the same fact in which consists its strength, viz., that it is a decimal system, dependent wholly for its accuracy on the position of a point. It is, indeed, not a system of different denominations, as grains, drachms, ounces, but a system of one denomination multiplied or divided by the placing of a point. I am aware it has been denied that there is any more liability to error in the one system than the other. That is a matter of opinion. From a pretty constant experience of both methods for twenty years, I think there is a decided balance of accuracy in favor of the British system. A man is more apt to write .01 gramme instead of 001 gramme, than he is to write gr. j. instead of gr.  $\frac{1}{10}$ , and when the writing is preceded by a calculation there is even greater liability of the decimal point going wrong. I am, therefore, of opinion that for prescribing and dispensing the British system of weights and measures is to be preferred, while for analytical work the metric is more convenient.

The British system, as we now have it, has one serious defect, which is noted in the Pharmacopœia itself. "It must be admitted that the absence in the present system of any denomination of weight between the grain and the avoirdupois ounce of 437.5 grains, and the fact that the ounce is not a simple multiple of the of the grain are grave defects." It might be added that the difference in volume between the minim and grain measure is an anomaly and absurdity. The old troy weight, or that modification of it which used to be called apothecaries', is a system complete and perfect in itself. Who it was that conceived the idea of mixing up two different systems and so producing confusion I do not know, but it was not a happy thought. Surely the trifling trouble of keeping two sets of weights, one for dispensing purposes and one for ordinary trade transactions, would be preferable to working with a hybrid mixture which is no system at all.

It is proposed that in the new pharmacopœia the proportions of ingredients should be given in the metric as well as in the British system. Of course the present method of stating "parts" and "fluid parts" is practically the same thing. In the volumetric tests it would be scarcely worth while to refer both to grain measures and cubic centimetres. It would probably be sufficient to give only the metric equivalents. In the present pharmacopœia the strength of a preparation is sometimes indicated by percentage, sometimes by grains in a fluid ounce, or some other amount. It would be distinctly better to invariably give the percentage, or in the case of liquids, it might be grammes in 100 c.c. For the convenience of prescribers it is quite appropriate to state in the account of a preparation the number of grains of the active ingredient in the fluid ounce; but under "characters and tests" the strength should be systematically stated by percentage—*Phar. Jour. and Transactions*.

### A Physician on Incompatibilities.

By C. C. HERSMEN, M.D.

A certain amount of chemistry, medical chemistry, is essential to the physician, and is not always to be gotten in books. He who would ignorantly combine sulphuric acid and a carbonate would certainly need to restudy his chemistry. I wish only to point out a few principles and some of the errors in prescriptions which are committed daily.

#### MIXTURE OF SOLUBLE SALTS.

Two soluble salts in solution which can by decomposition form and throw down an insoluble salt, such as an iodide, a chlorate or a bromide and sulphate of morphine or strychnine, etc., etc., should never be combined, unless the compound is desired for its therapeutic effect, such as acetate of lead and sulphate of zinc, or lead and opium wash, etc. A tyro in pharmacy might filter such prescriptions and thereby thwart your object. A dan-

gerous habit is to prescribe an alkali and an alkaloid, always bad pharmacy. I have seen prescriptions of the following kind: Cocaine hydrochlorate, glycerole of pepsin, syrup and lime water, which is also bad pharmacy.

#### CAUTIONS TO PRESCRIBERS.

Glucosides, such as santonin, colocynthin, etc., should never be prescribed with free acids.

Tannic acid is incompatible with alkaloids, albumin, gelatin, etc.

Iodine and Iodides should not go with the alkaloids.

Death has been caused by the combination of iodide of potash and sulphate of strychnine.

Iodide of potash should be prescribed with no drug except iodine and bichloride of mercury; with the latter it forms a double salt, biniodide, but as it is soluble in the excess of iodide it is not objectionable.

Bichloride of mercury is incompatible with almost everything. As a rule it should be prescribed in simple syrup, it being incompatible even with compound syrup of sarsaparilla, as it forms calomel.

Syrup of squills is incompatible with ammonium carbonate, but not with ammonium chloride.

#### MERCURY AND IODINE.

One of our South Side druggists, just at the beginning of his apprenticeship, recently received a prescription for mercury (liquid) and iodine (resublimated), with instructions to triturate the two and add other ingredients. The drugs fused with an active emission of smoke or fumes, leaving the residue a hardened mass to be broken up with the pestle.

#### INCOMPATIBLE PRESCRIPTIONS.

Many members of the medical profession daily write prescriptions which are incompatible. If a little judgment and forethought were exercised there are very few but would know better. The following is an illustration:

Tincture ferri chloridi,  
Potassii chloratis,  
Syrupi toluanti,  
Mucilaginis acaciæ.

In this mixture the acacia, acid and iron are incompatible.

The following prescription was a favorite for years, and some physicians are still writing it. It is a very good one to ex- and make trouble for the druggist:

Ferri pyrophosphatis,  
Aque bullientis,  
Syrupi zingiberis,  
Tincturae einchonæ compositæ,  
Acidi phosphorici diluti.

Unless prepared after a special process this will form a gelatinous mass.

On a certain occasion when I was in a drug store the following came in:

Mentholi, ʒ ss.  
Aque ammoniæ,  
Colloidi,  
Tincturae iodi aa f ʒ vss  
Ft. liii.

In place of a liniment a plaster is the result.