patient's life, and at the same time helps the surgeon to a more conclusive diagnosis as to the tumour's nature and contents, the question of its removal by operation becomes imperative. In the case I have reported, such an operation had no chance of success; but I am satisfied that a free incision along the whole surface of the tumour, so as to allow each separate compartment to discharge its contents, would have greatly relieved the patient, and materially assisted Nature's process of cure.

THE METRIC SYSTEM IN A NUTSHELL.

By EDWARD WIGGLESWORTH, M.D., Boston, United States.

"WASHINGTON, May 3rd.—Surgeon-General Woodworth, of the United States Marine Hospital Service, has issued a circular, with the approval of Secretary Sherman, requiring medical officers of the Marine Hospital Service to make use hereafter, for all official, medical, and pharmaceutical purposes, of the Metric System of Weights and Measures, which had already, under the Act of July 28th, 1866, been adopted by this service for the purveying of medical supplies."—*Boston Daily Advertiser*, May 24th, 1878.

The metric system is already legalised in both America and England. The only question now is, which of the two, the most progressive or the most conservative nation on earth, shall be the first to definitely and finally adopt it as an *exclusive* system? Russia has already taken the preliminary steps towards its final adoption. The rest of the civilised world long since made the system obligatory, in whole or in part, except that, in Sweden alone, its obligatory use is to date from a period in the future (1889).

Now, what is this metric system? Metric is from the Greek word *mētron*, a measure. The meter (measure) is, practically, a fixed quantity; namely, the ten-millionth part of the earth's quadrant from the equator to the pole. With the meter, everything can be *measured*; for it is itself the unit of length. A cube, the edge of which is the tenth of a meter, is the unit of capacity (liter); and the weight of a cube of rain-water, at its extreme contraction, the edge of which cube is a hundredth of a meter, is the unit of weight (gramme).

It is the gramme alone which concerns physicians; for, in the metric system, *everything is best prescribed and dispensed by weight alone*; numbers upon a prescription-paper being regarded by the pharmacist as representing grammes, unless the contrary is expressly stated. The fractions are always decimal.

The table is easily learned. It consists of six words, as prefixes, whether we deal with grammes, liters, or meters. These are: deci for tenth, centi for hundredth, milli for thousandth; deka for ten, hekto for hundred, kilo for thousand. Having these few words, the terms of Troy, Avoirdupois, and Apothecaries' weight, and of liquid measure, may be relegated to the limbo of pounds sterling, shillings, pence, halfpence, and farthings. As we say dime, cent, mill, so we say decigram, centigram, milligram. These prefixes are Latin, and *diminish* the value. Dekka, hekto, and kili are Greek, and *increase* the value. The mnemonic is G I L D; i.e., Greek Increases, Latin Decreases. Dekka occurs in the English work decade; hekto in hecatomb; kilo in chiliad.

"Being accustomed to the words mill, cent, and mill, we shall find the words 'milligramme', 'centigramme', and 'decigramme' quite as simple and easy to pronounce as our words 'pennyweight-troy', 'hundredweight-avoirdupois', 'scruple-apothecaries', etc., notwithstanding the assertion to the contrary of those who grieve to give up the 'short and sharp Anglo-Saxon words used in our present familiar old tables of weights and measures.'

Practically, moreover, for physicians, the whole system is reduced to grammes and centigrammes, just as, in money, to dollars and cents. On the right side of the prescription-paper, draw a perpendicular line from top to bottom. This decimal line takes the place of all the decimal points, and obviates the possibility of mistakes. This is the way dollars and cents are separated on business papers. Additional security is gained by writing the decimal fraction (centigrammes) of half-size and raised above the line (of grammes), since it represents a numerator of which the denominator (100) is omitted. To make assurance doubly sure, "grammes" may be written over the integer-column of figures, and, if wished, the word "decimals" over the decimal column.

Now, what is a gramme; or rather, the values, metrically expressed, of our present awkward weights?

	Prussian.		Practical.		Precise.
Grain 1	= 0.06	0.06	0.065		
℥ 1	= 1.25	1.25	1.29		
℥ 1	= 3.75	4.0	3.89		
℥ 1	= 30.0	32.0	31.1		

The "practical" table alone concerns us. The "Prussian" (by order of the Prussian Ministry, August 29th, 1867) is given merely to

show that our table is even nearer the actual truth than one which has been proved by actual experience to answer every purpose. The values of the grain and scruple are a little too small. As they are used for powerful drugs, this is an error in the right direction. The values of the drachm and ounce are a trifle too large; but the proportions, and therefore the ratio of drug to vehicle, are preserved.

A prescription written metrically is always proportionate; and, whether the pharmacist uses pennyweights, pounds, or tons; gills, pecks, or chaldrons; pints, gallons, or hogsheds, the ratios are preserved, and a teaspoon-dose contains the same amount of medicine.

In the metric system, *everything is weighed*, thus obviating the difficulties of evaporation, refraction and adhesion, and obtaining more conveniently more exact results. In our old "systemless system", some fluids were measured. How shall we obtain with weights the desired bulks of fluids with varying weights? Must we learn the specific gravities of all fluids? *Not at all!*

1. Fixed oils, honey, liquid acids, and chloroform, must at present be prescribed in our old weights, not measures, according to the *Pharmacopœia*. Here change old weights to metric ones.

2. Not enough chloroform or ether is included in any one prescription to admit of harm arising from the amount contained in a single dose, even were their weights regarded as the same with that of water. Moreover, it is not difficult to remember that ether weighs seven-tenths as much as water; chloroform twice as much as ether.

3. There remain infusions and tinctures, glycerines and syrups. These four are used in bulk as doses, or as solvents or vehicles. The former two may be regarded as identical in weight with water; the latter two as one-third heavier; and, when prescribing these, we need merely write, by weight, for four-thirds as much as we should write for were we prescribing water, and we obtain an equal bulk. The teaspoon or tablespoon dose will then contain the desired amount of the drugs employed.

Or, simplest of all, we can make any mixture up to any desired bulk by merely directing the druggist to use enough of the vehicle to bring the whole mixture up to the requisite weight for that bulk.

CLINICAL MEMORANDA.

THE DIAGNOSIS OF ANEURISM OF THE ABDOMINAL AORTA.

In the *Berliner Klinische Wochenschrift* for last July and August, Dr. Scheele of Dantzig drew attention to a new diagnostic sign of aneurism of the abdominal aorta, which he regards as pathognomonic. It is the suddenly heightened painfulness in the region of the aneurism caused by the compression of both femoral arteries. In order to test the value of this sign, I compressed both femorals in a case of abdominal aneurism a few days ago. The pressure was only kept up for ten or fifteen seconds, and was made twice, in order to permit the alteration in the auscultatory phenomena to be observed by myself and a colleague. We noticed a momentary retardation, and then an increase, in the impulse, with increased loudness in a soft systolic murmur audible at the lower end of the tumour. Directly afterwards, the patient complained of a sharp attack of pain, and continued to complain a good deal for the rest of the day. At night, he became worse, and died with symptoms pointing to rupture of the sac. At the *post mortem* examination, we found the peritoneal cavity full of blood; and there was an aneurism of the abdominal aorta as large as a turkey's egg, on the anterior aspect of which was a small slit about one-fourth of an inch long.

It is impossible not to feel with great regret that the increased tension in the sac of the aneurism produced by the compression of the femoral arteries may have been the means of producing, or at least hastening, the fatal termination of this case. One of Scheele's cases died of rupture a week after he had examined him; another died from the same cause after digital compression of the femorals had been kept up for some time in the hope of inducing consolidation in the sac. As I have been the means of bringing Scheele's diagnostic before the profession in this country (*vide London Medical Record*, January 1879), I think it right to publish this practical commentary upon it.

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THE PROPAGATION OF DIPHTHERIA BY MILD CASES.

The following passage in Dr. Eigenbrodt's Report on the Attack of Diphtheria in the Grand Ducal Family of Hesse-Darmstadt, in the *JOURNAL* of January 25th, is the reason for my sending the notes of the subjoined cases for publication.