

with it, and it is doubtful if it will ever find therapeutic application.

SULPHONAL.—(Syn., *Diethylsulphondimethyl-methane*). Occurs in colorless, prismatic crystals, odorless and tasteless (because insoluble); soluble in about 15 parts of boiling water, and in about 500 parts cold water, but more soluble in alcohol. It is slow in producing sleep, due to its insolubility, and it sometimes fails altogether, because eliminated from the system before dissolved. Care should be taken to get a good formula for prescribing, so as to insure solution; and it is advisable to administer warm, in tea or similar vehicle. Dose, 15 to 60 grains.

THYMECTIN.—Occurs in white powder form; slightly soluble in water. A derivative of thymol, said to have analgesic and hypnotic effects. Dose, 4 to 15 grains.

TRIONAL.—A derivative of sulphonal; occurs in lustrous scales, has a bitter taste, is readily soluble in alcohol and ether, but requires 320 parts of water for solution. Dose, 10 to 20 grains, up to sixty grains per day. Not much used, having no advantage over sulphonal.

URALIUM, or URAL.—(Syn., *Chloral-urethane*). Occurs in crystals, readily soluble in alcohol and ether, but insoluble in cold water and decomposed in boiling water. Has been highly recommended as superior to chloral by some, by others just as eagerly denounced. Not much used. Dose, 15 to 45 grains.

URETHANE.—(Syn., *Ethyl-urethane*). Occurs in colorless crystals, odorless, with a nitre-like taste; readily soluble in water, alcohol, chloroform, glycerin, etc. Has yielded good results, and is widely used; it is a chief ingredient in numerous proprietary specialties advertised in medical journals. Dose, 15 to 45 grains, in aqueous solutions; also used subcutaneously, in doses of 4 grains.

Potassium Iodide with Citrate of Iron and Quinine in Mixtures.

The following two prescriptions have been pronounced "incompatible":

A.

B. Citrate of iron and quinine . . . 30 grains.
Potassium iodide 90 grains.
Water } ad 1 fl. ounce.
Syrup }
M.

B.

B. Citrate of iron and quinine } ad 30 grains.
Potassium iodide }
Water 2 fl. drachms.
Syrup 6 fl. drachms.
M.

It has been stated in general terms that KI is incompatible with citrate of iron and quinine. Experimental trials with the mixtures prescribed above show that this statement is too sweeping.

The mixture marked "B" is at first only slightly unclear, and soon becomes darkened and very turbid; when the quantities of water and syrup are doubled, however, the mixtures are almost free from turbidity.

Mixture "A," in which the proportion of liquid compared with the quantity of the scale salt is twice as great as in "B," is free from precipitate and of a greenish-yellow color. The substitution of alcohol for about twenty-five per cent. of the water, did not seem to affect the result in any degree; but when a greater proportion of alcohol was employed a reddish precipitate of iron-compound was the result, and a mass of salt crystals also separated if at the same time the total quantity of liquid was as limited as in "B" in proportion to the citrate of iron and quinine.

The conclusion reached from the several experiments made was that one part of citrate of iron and quinine dissolved in water, or in water and syrup, together with an equal or greater amount of potassium iodide, will afford a satisfactory mixture if the quantity of water, or water and syrup together, amounts to not less than 30 parts; and that the use of alcohol in place of any portion of the water does not improve the mixture, but, instead, causes considerable turbidity and discoloration if used in a proportion exceeding twenty per cent.

Mixture "B" remained greenish yellow and almost clear, containing but a trifling quantity of light sediment at the end of a month.—OSCAR OLDBERG.

Notes on Essential Oils.

CAMPHOR OIL.—Since the examination of this oil by Messrs. Schimmel, and the publication of their suggestions as to the practical application of its constituents, in 1885, considerable attention has been directed to it, but the importation from Japan has fallen off. As a material for artists the more volatile portion has been found very useful, as its capacity for dissolving resins is greater than that of turpentine or any other essential oil.

CASSIA OIL.—The previous reports have furnished ample information as to the source and preparation of this oil, but there is still some uncertainty as to the conditions influencing its quality. Oil containing only from 45 to 55 per cent. of cinnamic aldehyde has again come into the Chinese market, and it is stated to be absolutely pure. This deficiency is accounted for by the statement that young and imperfectly ripened material always yields such oil. On examination Messrs. Schimmel found that the oil was not to be distinguished by its external appearance and characters from oil of the best quality. It did not contain rosin, fat oil, petroleum, or any of the coarser adulterants. This oil has been rejected by the Hong Kong merchants, but some of it has found its way to India and places where low price is the chief attraction, and there is but little appreciation of quality. The explanation given by the Chinese of its inferior character cannot be summarily rejected, since it is possible that young leaves may contain a considerable proportion of the acetic ester of cinnamyl (C_9H_9OAc), and that cinnamic aldehyde may be formed from that by oxidation during the growth of the plant. But it

is more probable that this inferior oil is derived from other parts of the plant, or from another species of the genus of *Cinnamomum*. Messrs. Schimmel remark that the previous history of this subject furnishes no inducement to believe the statements made by the Chinese, and they reserve their opinion until they shall have examined the raw material from which the inferior oil is obtained. Meanwhile they recommend that the determination of cinnamic aldehyde should be made the test of quality in purchasing the oil, and they state that the oil imported since last October has been found to contain at least 85 per cent. and sometimes as much as 94 per cent. of cinnamic aldehyde.

BERGAMOT OIL.—For many years the examination of this oil has been limited to the determination of its physical characters, and it is only within the past year that the ascectic ester of linalool has been recognised as its most important constituent. This fact points to a means of determining the quality of the oil, as the ester is the odorous constituent. By a saponification method described under the head of "Lavender Oil," the normal amount of ester has been found to be about 40 per cent., and the test may be relied upon for ascertaining the quality of bergamot oil. The chief adulterants are turpentine, orange, and lemon oils. All three reduce the solubility of bergamot oil in dilute alcohol, as well as the specific gravity and, of course, the amount of ester. The presence of orange oil is also indicated by its high optical rotation. In the examination of bergamot oil it is necessary in the first place to determine the specific gravity and the rotatory power. The alcohol test requires to be made more stringent—the oil should dissolve at 20° C., in from 15 to 2 volumes of 80 per cent. alcohol. Slight turbidity, increasing on addition of more alcohol, is due to separation of bergaptene; but no drops of oil should remain undissolved. Distillation of the oil under normal atmospheric conditions causes considerable decomposition, and this treatment is quite useless for the purpose of valuation. The results of a long series of experiments have proved that oil containing a high amount of ester is distinguishable from those kinds containing smaller amounts by the higher specific gravity and greater solubility in alcohol of 80 per cent. Oil of undoubted purity pressed by Messrs. Schimmel was found to contain more ester than any other kind, and it is probable that a perfectly pure oil is not to be met with in commerce. Experiments with mixtures of bergamot oil and turpentine, orange or lemon oils have shown that the ester determination may be fully relied upon, and as a minimum amount there should be 38 per cent. The specific gravity should not be under 0.881 at 15° C., and the optical rotation not more than 20° with a column of 100 mm. Practical experience has long proved that distillation of the oil is injurious, and that the much less convenient process of pressing must be preferred on that ac-