

objections raised against it are its insolubility and the practical difficulties attending the mixture of the ingredients. Besides these, it may be urged that the administration with the phosphorus of nearly one hundred times the quantity of a mixture of variable chemical composition, consisting partially of benzoic acid, may possibly cause the pills not to produce the desired effect. The defence of the formula, it is merely stated that phosphorus can only be safely manipulated under water, which is of less specific gravity than melted balsam of tolu. It is a well-known chemical fact, however, that the oxidation of phosphorus is checked by the presence in the atmosphere of a small proportion of the vapour of certain inflammable bodies (ether, turpentine, and essential), and some recent experiments have shown me that by the aid of these substances phosphorus may be safely made into pills without having resort to the P.B. process. This is the mode of procedure—Solid paraffin is worked up into a stiff paste with ether in a mortar; any required quantity of phosphorus is added, and well mixed with the paraffin. Should the phosphorus show signs of oxidation during the process, a few drops more ether will check it at once. The addition of a little powdered vegetable charcoal materially assists the minute division of the phosphorus, and also renders the pill mass firmer. Finally, heat the mass to about 80° F., by placing the mortar in warm water, roll into pills, and varnish as usual. If the pills be not made for immediate use, let them be kept in a well-corked bottle, in which is placed a piece of cotton-wool, moistened with essence of lemon. Soap or stearin may be substituted for the paraffin if desired, but the latter presents several advantages. Its melting point is low, and nearly approaches that of phosphorus; it contains no oxygen being a mixture of several bodies having the formula $C_n H_{2(n+1)}$; and in contact with the fluids of the body it is unlikely to form any dangerously active compound.

For the charcoal may be substituted any substance not likely to oxidise the phosphorus; phosphate of lime, for example. Sugar (which was suggested in the course of the discussion on the "*Pharmacopœia Appendix*") is specially unsuitable.

In a future paper I hope to offer some observations on the hypophosphites and other salts of phosphorus.