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SYRUPS CONTAINING PHOSPHORIC ACID.\*

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The difficulty of preparing chemical food according to the formula published in Parrish's "Practical Pharmacy" is well known. The phosphate of lime is only partly soluble; the strict operator is puzzled to know how much the syrup should measure when completed. He probably thinks that he has solved the difficulty when he finds in the description of the syrup that each teaspoonful contains "about" 1 gr. phosphate of iron, and  $2\frac{1}{2}$  grs. phosphate of lime. Beginning with the lime phosphate, he finds that to agree with the description, the syrups should measure 36 fluid ounces. Attempting to check these figures, he calculates the quantity of ferrous phosphate produced—supposing all the iron to be utilized, which, as will be shown, is not the case—he finds that if he makes 36 fl. ozs. of syrup, each fl. drachm will only contain  $\cdot 894$  of a grain of phosphate of iron. As is now shown in recent works on elementary chemistry, when phosphate of soda and sulphate of iron are mixed together, sulphuric acid is liberated,  $2\text{Na}_2\text{HPO}_4 + 12\text{H}_2\text{O} + 3\text{FeSO}_4$ ,  $7\text{H}_2\text{O} = \text{Fe}_3\text{P}_2\text{O}_8 + 2\text{Na}_2\text{SO}_4 + \text{H}_2\text{SO}_4$ , which would dissolve a portion of the newly formed phosphate.

Again, can a syrup be made to contain 40 ozs. (apothecaries') of sugar, besides several kinds of phosphates and acids, and be limited to 36 fl. ozs. and have all its constituents in solution? It is

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