savings in the course of a long experience. As the student listens to his teachers, such suggestions may appear theoretical, but he can convert such theory into practice to great advantage. The relation of the teacher's theory to the student's practice may be illustrated.

The lecturer stated that calcium chloride was a type of deliquescent bodies. The meaning of the term was given and illustrated, and a list supplied of substances belonging to this class. Later on came a classification of the materials called for in pill form, and a classification of excipients, telling what were best absorbents, what best to use as mere diluents, and what to give proper cohesiveness and plasticity. Then came instruction in the theory of pill coating and in the practice of gelatin coating. A prescription is written, calling for seventy-five grains of calcium chloride in sixty salol-coated pills. Let me tell you its experience. Druggist number one telephones to every wholesaler in town to ascertain if they have a stock pill of 11/2 grain of calcium chloride, salol-coated, made by any manufacturer. Failing to find such, he returns the prescription to the patient with the information that the article called for cannot be obtained.

Druggist number two, remembering the very deliquescent character of the calcium chloride, informs the customer that the pill will not keep if it is made. The patient, after visiting several stores and becoming about convinced that the specialist he has paid a ten dollar fee to is an ignoramus, at least so far as pharmacy is concerned, stumbles upon a theoretical college boy. As soon as he reads the prescriptions, the three lectures, "Deliquescence, Pill Making and Pill Coating," come to mind. To his 75 grains of calcium chloride, he adds an equal weight of powdered althrea and twothirds of its weight of vowdered acacia. If it is a damp day he will add two or three drops of water; if a dry day, ten or more. As soon as made he will impale the pills upon the needles of the coating machine, and subsequently dip them in melted salol contained in a short straight tube placed in a water-bath. After dipping sufficiently he will touch the needleholes with a camel-hair brush dipped in the melted salol. He will not melt fifty cents' worth of salol in an open capsule. and, placing this capsule in direct con tact with flame, decompose the salol. His lecture upon the fusing point, and his classified table, will remind him that salol fuses at the low temperature of 110° F. At once he has re-established the faith of the patient in his physician and convinced him that he should bring his prescriptions to the store where hc is employed, if he would save time and annoyance.

It seemed a small matter that the student was told to remove all spiculæ of glass from a bottle before placing a chemical solution in it; but, when several bottles have been returned whose contents were decomposed or precipitated by the roughness of the interior of the bottle. it becomes a practical suggestion. To the student it appeared an over-refinement of theory to be told to use porcelain shot in removing precipitates, or, if lead shot was used, to remove all adhering lead from the surface of the bottle by rinsing with a little nitric acid; but when he has had one or two serious experiences from failure to observe this precaution the theory becomes practical.

The statement that gentian, dandelion and some other drugs contain sugar, and in manipulating them care should be exercised to prevent fermentation, assumes a practical character when the acid in a solid extract has decomposed a pill mass containing it, reflecting upon one's knowledge and skill unfavorably.

The statement that glycerin is hygroscopic assumes practical value when one has compared the keeping qualities of extracts containing it with those free from it. The possibility of solid extracts containing copper from being made in copper pans ceases to be a theory after a spatula previously moistened or dipped in acidulated water has been allowed to remain in contact with the extract for a few hours and upon removal found to be coated with copper. The suggestion, not to fill shelf bottles too full and to avoid fixing too firmly in place the stoppers of those containing gaseous solutions or volatile liquids, becomes practical after an increase in the atmospheric temperature has caused an expansion of the liquid or a disengagement of gas, resulting in the bursting of the container with damage to the fixtures and the neighboring stock.

The warning, not to tightly bottle a prescription in which there is a reaction until such reaction is entirely over, may have been passed by unheeded; but after a cough mixture containing ammonium carbonate and syrup of squill explodes, or one containing fresh spirit of nitrous. ether, fluid extract of buchu and fluid extract of uva ursi, or one containing freshly prepared neutral mixture, or one with recently made nitrohydrochloric acid bursts in the hands or pocket of a customer or upon a parlor shelf, care is exercised to prepare such mixtures in a broad, shallow vessel, using the extended surface, shallow depth and constant trituration to favor the escape of the generated gas and to guard against their being bottled before the reaction is over.

Do not, as did one, place an ounce of sodium bicarbonate and six drachms of salicylic acid in a mortar and add all at once six ounces of water, then, when the mixture effervesced and flowed out of the mortar over the counter, try again by putting similar ingredients in a quart bottle, tying in the stopper, and giving it to another to shake, with the result of an explosion, causing serious loss and damage. Place the solids in a mortar and add the liquid very slowly, controling the reaction.

The statement that density of precipitation is controlled by destiny of solution, and that an excess of alkali dissolves many alkaloids and decomposes others, may have had no practical value in the lecture room; but when a 40-per cent. loss is made in separating an alkaloid, or failure is met in assay processes from neglect to take these statements into account, they assume a commercial importance.

But theory and fact must be practically applied. We have known a graduate in pharmacy to condemn a select iodide of sodium and pronounce it bromide. Scrutiny of his method revealed the fact that, instead of adding chlorine water to a 5-per cent. solution of the salt and subsequently adding chloroform to obtain a violetcolored solution, he had used a concentrated solution of the salt and an insufficiency of chlorine, and, forgetting that the excess of the salt had a stronger affinity for the iodine than the chloroform could exert, read his faint coloration of the chloroform as due to bromine.

Apply the U.S.P. test to potassic iodide, and then add an excess of the salt until it relioves the color from the chloroform, you will get my meaning.

The estimaticn of extractive percentages may have seemed a simple process and an unimportant matter. Yet we have known three operators to differ 20 per cent. in estimating extractive, owing to difference in temperature and thoroughness of extraction, and we have