

## THE U. S. P. X NITRATE TEST AS APPLIED TO SOLUTION FERRIC CHLORIDE.\*

BY M. W. CAREY AND R. E. SCHOETZOW.

During the course of an examination of a sample of solution iron chloride, the prescribed U. S. P. X Test for nitrates using ferrous sulphate and sulphuric acid was used and produced a brownish ring at the junction of the two liquids.

When the same sample was subjected to the nitrate test, given under potassium iodide in the U. S. P. X, wherein solution of sodium hydroxide and metallic aluminum are used, no test for nitrates was indicated.

Other radicals than nitrates may give a reaction in the above-named ring test and in order to verify the results obtained in the above aluminum sodium hydroxide test, two solutions of ferric chloride were prepared in neither of which any nitric acid was used. In one case the mixture of ferrous chloride and hydrochloric acid was oxidized by adding hydrogen peroxide and heating; in the other, gases which are generated by the action of hydrochloric acid on potassium chlorate were used to oxidize the ferrous chloride and hydrochloric acid. In the preparation of these solutions care was taken to dispel all excess chlorine or peroxides by heating for two hours on the water-bath.

These ferric chlorides were tested according to the U. S. P. "ring" test and brown "rings" were obtained in each case. This seemed to prove that the U. S. P. X nitrate test was caused by something besides nitrate since we had not used any nitric acid in the manufacture. To make sure we applied the test to each of the constituents of the two solutions we made. Negative tests resulted in each instance. But, when we applied the test to a mixture of the hydrochloric acid and the oxidizing agent (it did not matter whether it was the peroxide or the chlorine gases) a brown ring was formed.

These experiments show that if iron chloride yields a positive U. S. P. X nitrate test it may not be due to nitrate, but to the presence of hydrochloric acid and an oxidizing agent.

ANALYTICAL LABORATORIES,  
E. R. SQUIBB & SONS.

## WHAT DRUGGISTS ASK AN EDITOR.†

BY WALTER M. CHASE.<sup>1</sup>

During the past few days we have heard more or less about Dr. Charter's report on "What the Druggist Should Know." The Commonwealth investigation has been a most complete one, involving several years of intensive study, and its findings will be of incalculable value and interest to everyone connected with the profession of pharmacy.

However, there is sometimes a considerable difference between what a man should know and what he wants to know, and it was with the idea of determining what things fall into the latter classification that I started to assemble the material that forms the basis of this paper.

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† Read before Section on Commercial Interests, A. PH. A., Philadelphia meeting, 1926.

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The magazine with which I am connected, in common with most of the others in the same field, conducts what is known as an "Answers to Queries" department—a section of the journal wherein is listed some of the questions asked by readers and where answers to these questions are given. The primary object of such a department is to supply information on subjects of pharmaceutical interest, the assumption being that the solution of a problem which has troubled one druggist will also interest others.

It might be assumed that the questions which reach us in this way are concerned mainly with matters relating to the prescription department. Such is not the case. I am going to cite an even hundred of them. In selecting the queries I took them as they came—one after another the way each day's mail brought them in—and only 35 per cent involved what might be termed straight pharmaceutical problems. The remaining 65 were on entirely different matters. Nineteen concerned themselves with toilet goods, eighteen were devoted to commercial problems, six related to the soda fountain, four took up educational matters, thirteen were on subjects that would seem to be entirely divorced from the retail drug business and five refused absolutely to fall into any classification that I could devise.

It is these last five that I propose to take up first. They illustrate nicely the wide diversity of interests that a druggist may have and they also serve to show why all questions that are put up to an editor cannot be answered through the pages of his magazine.

The first one of the five was from a druggist in the South who has been on our subscription list for many years and with whom we have had considerable correspondence. He writes: "My son left home about a month ago. He had tired of the long hours in the store with me, and said he was going to Detroit to get a job in an automobile factory. We have not heard from him since he left us. Do you suppose, by any chance, that you can locate him?"

Rather a big order, was it not?

As luck would have it, we were able to help. The boy, himself a reader of our pages, had called on us only a few days before to see if we would give him a reference for a drug-store position. He had found factory work not to his liking and wanted to get back into the drug business. We reached the boy on the phone at the store where he had secured employment, read his father's letter to him, and he promised to write home that very night.

Unclassified question number two came from a man who wrote: "I have been in the drug business for ten years and think it about time that I join one of the national pharmaceutical associations. Would I get more benefit out of a membership in the AMERICAN PHARMACEUTICAL ASSOCIATION or in the National Association of Retail Druggists, and why?"

It required three typewritten pages to answer that query.

Question number three came from a reader who asked: "What are the three most important problems in pharmacy to-day? Also tell me how they may be solved. A stamp for reply is enclosed."

We answered his letter.

Number four is a proposition that we get in slightly modified form throughout the year and a number of times a year. There seems to be no closed season for it.

Here it is: "I am a member of our local Rotary Club (or Kiwanis or Lions) and next month I am scheduled to deliver a talk on the history of pharmacy at one of our noon luncheons. Please outline for me the progress of our calling since its early beginnings."

We are able to handle a request of this kind by referring the druggist to several such talks that we have printed in recent years.

Somewhat along similar lines, but of a type rather more difficult to answer satisfactorily, was the fifth unclassified query. It read: "What can you tell me of the histology and pharmacology of the drugs used by the Indians prior to the coming of Columbus? I am a student at the "So and So" College of Pharmacy and have chosen this subject for my thesis."

We are generally able to refer the makers of such requests to sources where information may be obtainable, but, if there are any faculty members in the room now, I hope they will take the hint and persuade their students that an acceptable thesis doesn't necessarily mean a subject which requires a lifetime of study.

Swinging back now to the thirty-five queries concerned with pharmaceutical problems, I find that eight of them involved incompatibilities of various kinds. These are questions that a pharmaceutical editor might be expected to receive and we try to answer them fully and explicitly. Here are some typical questions in this class: Why a color change when syrup of ipecac and guaiacol are mixed? What happens when aspirin and sodium bicarbonate are mixed? What is the cause of discoloration in capsules of sodium iodide and salol? What reaction occurs when zinc sulphate, sulphurated potassa and rose water are mixed? Should adrenalin and argyrol mixtures be dispensed? What causes a precipitate in a mixture of ammonium acetate, spirit of niter and syrup of cocillana? What causes a red color in a solution of salicylic acid and bicarbonate of soda? This last question, by the way, was sent by a subscriber who lives in Egypt.

Another group of seven in this same bunch of thirty-five is made up of questions which we answer with a form letter. The inquirer asks: How can I make Sloan's Liniment, or Red Pepper Rub, or White Wizard Oil, or Flit, or Petrolagar, or any one of the other hundreds of proprietary preparations on the market. We frankly tell the makers of such requests that they cannot do what they have in mind—that Sloan's Liniment or Flit is a proprietary product the composition of which is known only to the maker and that it is contrary to law to attempt to appropriate another man's property.

Of course, if the inquirer asks for the formula of a product that will serve the same purpose as Sloan's Liniment, it puts a different face on the matter. We then, if we are able to do so, supply a working formula together with a notation to the effect that we have no knowledge of the composition of the article in question and that the formula we are supplying is simply to serve a similar purpose.

Formulas for preparations from foreign pharmacopœias and preparations called for under little-known synonyms are frequently requested by readers. In the group of thirty-five now under discussion were requests for Imperial Drink, a formula for which was located in Squire's Companion to the British Pharmacopœia; elixir elegans, which was found to be a synonym for simple elixir; kinderpulver, the German name for compound powder of rhubarb; and unguentum

gallæ comp., which was one doctor's way of specifying gall and opium ointment.

How to make a reconstructive tonic, Benedict's solution, effervescent salts, Haines solution, pills of cod-liver oil, and a liniment especially suitable for football players were among the questions asked. Still others were how to medicate alcohol so that it might be sold legally (sometimes, incidentally, we get the reverse of this question), what the difference is between sodium dimethyl arsenate and sodium methyl arsenate, the cause of a precipitate of Fischer's solutions, how to purify kerosene, the trade name for pentaiodomethylenedisal, and whether or not ether is developed in the manufacture of glycerite of tannic acid.

Three questions in this group involved the manufacture of percentage solutions, a procedure which our experience indicates seems to cause a great deal of trouble. One man wanted to know how to make 5 per cent phenol from 90 per cent; another how much 40 per cent formaldehyde to use in making a pint of ten per cent solution; a third how much Epsom salt would be required for a quart of saturated solution.

An unusual request was from a store in Milwaukee which sent us two Danish prescriptions originally written by a doctor in Copenhagen. We succeeded in getting translations of both.

"How much does a teaspoonful hold?" asked one worried druggist who explained that one of his physicians wrote heroic doses and that he, the druggist, was afraid patients might get an overdose if the teaspoons they used held more than 60 minims. We suggested a graduated medicine glass with each such prescription, for investigations have shown that the average household teaspoon frequently has a capacity of as much as ninety minims.

"What do you consider a fair price for this prescription?" was a question that came up only once in my list of thirty-five, but it is one that we get nearly every week. We answer this query by a letter explaining several pricing systems that are in common use.

The group next largest to the one on straight pharmaceutical problems is that which concerns toilet goods. Nineteen per cent of the questions were of this character.

Starting at the top, eight of the nineteen were about the hair. How can straight hair be made curly? How can curly hair be made straight? What will dye gray hair brown? What will turn dark hair gray?

Rather contrasty, don't you think?

A fifth man wanted a formula for a preparation to keep the hair in place. A sixth stated he had prepared a liquid shampoo that had been approved by the testing department of a leading women's magazine, but that a sediment developed after the shampoo stood in bottles for a while. Would we tell him how to prevent it? A seventh wanted to know what he could use to color a hair oil red.

We were able to answer these questions satisfactorily—they bob up frequently—but the eighth man had us stumped. He asked for a "razorless shave powder," one that would remove whiskers promptly without irritation, and he wanted three strengths of powder—one for tough beards, one for medium beards and one for boys just beginning to shave.

Other requests in this group included a skin bleach for negroes, a way to make quince seed lotion white, a liquid cold cream milky in color and readily absorbed

by the skin, a perfume oil that would cover up ten per cent of spirit of camphor in a toilet lotion, a powder for holding false teeth in place, a moisture-proof rouge, a peppermint-flavored tooth paste and the title of a good book on cosmetics.

The eighteen questions on commercial problems were widely diversified and showed that the average retail druggist has plenty to occupy his mind.

One of the most interesting, perhaps, came to us in the form of a night letter from Texas. This man had had his store building sold out from under him and had to seek a new location. He was offered one in a downtown hotel then under process of construction and the landlord wanted 10 per cent of the store's receipts for the first year as rent. From previous correspondence with this man we were familiar with a number of details of his business and he felt that we were in a position to advise him as to whether or not he should sign the lease. After an exchange of telegrams we advised against it. He later secured another location at a set figure, which was about equal to six per cent of his sales. He reported to us, after a month in the new location, that the prospects were very favorable indeed and that he expected, if business kept up the way it started, to cut his rent to about five per cent.

We are quite frequently consulted on problems similar to this one, as two more of the eighteen questions will show. One read: "Is a neighborhood or transient location better for the man just starting in business? The other: "Does a neighborhood store show a bigger margin of net profit than a downtown one?" Questions like these, of course, cannot be answered specifically.

A question that always is sure to bob up and that we find twice in our list of eighteen is: "How should I go about it to put a preparation of my own over in a big way?" A running mate to this one is: "How can I trade-mark a product of my own so that nobody can make one like it?"

Right here I want to digress a little and say that trade-mark laws seem to be a mystery to the average retailer and especially to the man who is desirous of branching out into the manufacturing field. He seems to think that once he has secured a trade-mark, his troubles are over. Which, of course, is far from the facts in the case.

Questions on store expense come to us regularly. "What is the average expense percentage for a drug store? How much pay should a registered clerk receive? What percentage of my sales should I spend for advertising? What proportions of a clerk's sales is represented by his salary? Is wrapping paper an item of expense or should it be charged against the cost of goods?" All these were among the questions asked.

"Where can I find a syndicate that will write ads specially for my store at a cost not to exceed \$5 a month?" was a stagerer. We couldn't answer it.

Neither could we give a direct reply to this one: "I have had four years' experience in the drug business and will come to Detroit to work for \$60 a week. Please let me know of a good firm that wants such a man."

Three of the eighteen commercial questions asked for the names of makers of commodities. One man asked to know where to buy Yoghurt, another wanted rubber aprons and a third wanted snow-white petrolatum that would look like cold cream.

And, finally, two queries from advertising agencies. One asked us to give

an estimate of the number of crutches that were sold annually by drug stores and the other wanted our opinion as to the advisability of putting another 50-cent tooth paste on the market.

The six questions in the soda fountain field covered a wide spread. "What kind of an electrically-refrigerated fountain shall I buy?" was the most difficult to answer. An easier request was for the name of a concern that makes an ice-cream dipper that will dip out a pint at a time.

Insuring cleanliness at the fountain was responsible for two of the questions: "How can marble be cleaned?" and "What will polish metal parts?"

Questioner number five wanted to know how to make marshmallow topping.

The sixth man wanted to know where he could obtain a list of 500 fountain owners operating in Pennsylvania.

Two of the four questions along educational lines involved the matter of reciprocal registrations. One man asked if New York reciprocated with Florida and the other if a Canadian pharmacist could obtain reciprocal registration in the United States. The third man wanted to learn the entrance requirements for Michigan pharmacy colleges and the fourth, a student, asked to be supplied with a list of books for supplementary reading.

"How can I make a still from an orangeade cooler?" was the first of the thirteen questions on lines that may be considered foreign to the drug business. "How can I make a varnish for glass letters from silicate of soda?" was the second poser.

Other things that druggists wanted to know were how to prevent streaking when dipping chocolates, how to permanently dye sand for use on outside signs, how to make paint remover for automobiles, how to frost flint glass, how to dye flowers, how to make eye-glass cleaners, how to restore hectograph pads, how to resilver mirrors, how to prepare anti-freeze from petrolatum and how to make chewing gum.

And so it goes. The queries we get help make life more enjoyable. If we could remember all we have to look up we'd know a lot.

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#### HISTORICAL NOTES.

**John Tradescant**, the elder, gave to England the nucleus of its first museum and his son, in order to contribute thereto, searched about in the swamps, forests and hills of Virginia for several years in the early part of the 17th century and is entitled to the distinction of making the first botanical and geological survey in this country. The Garden Clubs of Virginia has placed a memorial window in the old Ashmolean museum on the historic "Broad," Oxford.

We find the name of Tradescant associated with Virginia Spiderwort, *Tradescantia virginica*. This native Virginia plant became an English garden favorite and the English naturalist, James J. Walker, said of this early

botanist, that "no Englishman will ever see a lilac in full flower without thinking of John Tradescant."

**Radola Gajda**, one-time drug clerk and soldier, has been chosen as the new Fascist II Duce of Czecho-Slovakia. Gajda was born Rudolph Geidl, son of a German family who had settled in Moravia.

**M. Valeur**, Assistant Professor in the Paris faculty of pharmacy and head pharmacist of Paris asylums, has succeeded the late M. Lefay on the Codex Revision Committee. The next historical exhibit of the Bibliotheque Nationale will open on February 24th and will illustrate the epoch of Louis XIV and the extravagant formula of the passing of the notorious marquise de Brinvilliers, among other interesting historical documents.