drug is far greater (approximately ten times as great) than by the subcutaneous method ordinarily used in clinical practice.

When the several market specimens of procaine were tested in this way, the animals so tested succumbed in no case. These results indicate that none of the specimens is to be considered dangerous when used in ordinary dosage for normal individuals. (Since the accidents attending the use of procaine depend on abnormal conditions not understood at present, no responsibility for the safety of the drug can be assumed as a result of these experiments.)

Several specimens of procaine-Rector and five of procaine-Abbott are decidedly brownish in color even when finely powdered and yield yellowish solutions.¹ All the earlier specimens from the Abbott Laboratories and from the Rector Chemical Company were beautifully white and crystalline.

Brand	Date Received	Color	Melting Point	Ash
Procain (Abbott), from Committee on Synthetic Drugs....	12/21/17	White	154-155 C.	None
Procain (Abbott), submitted to Council P. and C.	1/29/18	White	153.5-154.5 C.	None
Procain (Abbott), Gen. Pur. Off. U. S. Army.....	8/31/18	White	152.5-153.5 C.	None
Procain (Abbott), Gen. Pur. Off. U. S. Army, No. 89999.....	9/30/18	Slight brownish tint	153-154.5 C.	None
Procain (Abbott), Gen. Pur. Off. U. S. Army, No. 89998.....	9/30/18	Slight brownish tint	153-154.5 C.	0.005%
Procain (Abbott), Gen. Pur. Off. U. S. Army, No. 89997.....	10/ 8/18	Slight brownish tint	153-154 C.	None
Procain (Abbott), Gen. Pur. Off. U. S. Army, No. 89996.....	11/ 4/18	Slight brownish tint	153.5-154.5 C.	None
Procain (Abbott), Gen. Pur. Off. U. S. Army, No. 810995.....	11/ 4/18	Slight brownish tint	153.5-154.5 C.	None
Procain (Farbwerke Hoechst Co.), submitted to Council....	10/24/17	White	153-154 C.	None
Procain (Farbwerke Hoechst Co.), submitted to Council....	12/10/17	White	153-154.5 C.	None
Procain (Farbwerke Hoechst Co.), submitted to Council, market spec. "A56".....	8/ 9/18	White	153.5-154.5 C.	None
Procain (Farbwerke Hoechst Co.), submitted to Council, market spec. "A57".....	9/ 9/18	White	153.5-154.5 C.	None
Procain (H. A. Metz Lab.), market spec. "A63".....	8/23/18	White	153-154 C.	None
Procain (H. A. Metz Lab.), market spec. "A67".....	9/23/18	White	153-154 C.	0.018%
Procain (Rector), from Committee on Synthetic Drugs.....	12/18/17	White	153-154.5 C.	None
Procain (Rector), market spec.	8/20/18	Slight brownish tint	153-155 C.	None
Procain (Rector), market spec.	8/23/18	Slight brownish tint	153-155 C.	None
Procain (Rector), market spec.	8/23/18	Slight brownish tint	153-154.5 C.	None

The following tests were also made: About 0.01 to 0.02 gm. procaine was added to about 10 to 15 c.c. distilled water contained in a test tube, and this placed in a bath of boiling water for one hour. The solutions were then cooled and examined. After standing over night, they were examined again. No deposit of any sort and no change of color could be detected in any case.

When the matter of the discolored specimens of procaine was referred to the Rector Chemical Company for explanation, the firm wrote that some months ago for a short time for some unexplainable reason its procaine was slightly yellowish in color, but that every batch was carefully tested and found to answer all chemical requirements. The firm stated that the product which it has sent out for some time past has been white and yields a colorless solution.

To a like inquiry the Abbott Laboratories replied that the five samples which were found discolored were products manufactured by the Rector Chemical Company and represented goods which it had purchased to assist in filling

1. A specimen of procaine recently sent the Council by the Metz Laboratories had a faint tinge of yellow, but, like the discolored Rector and Abbott specimens, complied with the identity and purity tests for procaine.

delayed orders, because the firm had found itself unable to keep pace with the demand on account of delay in securing needed apparatus. The firm submitted protocols to show that the procaine made by it, by Rector and by Metz were of equal toxicity.

So far as the evidence goes, there is nothing to indicate that the yellowish or brownish colored specimens of procaine are seriously impure. On the contrary, the compliance with the chemical and toxicologic tests indicates that the color is due to an insignificant trace of some colored substance produced in the manufacturing process. In view of this, the Council considers the use of the discolored product to be justified in the present emergency, although it would urge that for the future the supply of procaine should be free from color and also comply to the tests of purity. It makes this request in the interest of the medical and dental professions, which use the drug, and also in a desire that in the manufacture of synthetic drugs, the United States shall occupy a high place.

Correspondence

"THE ROENTGENOLOGIC STUDY OF EMPYEMA CAVITIES"

To the Editor:—In his article on "The Roentgenologic Study of Empyema Cavities" (THE JOURNAL, December 14, p. 1975), Dr. Franklin A. Stevens advocates an oil emulsion of bismuth subnitrate for the outlining of empyema cavities, as a substitute for bismuth paste. His reason for employing the oil mixture in preference to the petrolatum as given is that the oil mixture will fill all the crevices of the cavity and prevent bismuth absorption. Wishing to verify his experience, I desired to determine whether the oil and bismuth and powdered acacia will make a stable homogeneous mixture. I therefore made up the mixture as described and left it in the test tube overnight. In the morning I found all the bismuth at the bottom of the test tube and the pure transparent oil on top. Again the test tube filled with a 10 per cent. bismuth paste shows it to remain homogeneous.

This, in my opinion, makes the mixture of oil and bismuth not only unsuitable for the purpose but also dangerous, because the pure bismuth might separate and gravitate into the deepest recess between the dome of the diaphragm and the pleura and make it difficult to remove and in time cause absorption, with its toxic effects. If the oil and bismuth mixture were injected into tortuous sinuses, at the end of which were abscess cavities, the bismuth would remain in the abscess cavities, while the oil would run out and cause very serious complications.

Bismuth poisoning is not eliminated by substituting oil for petrolatum; but we have demonstrated that the accidental occurrence of bismuth poisoning can be prevented by proper technic in employing the bismuth paste.

In order that the proper preparation of the bismuth paste may be better known, as it is used at the present time, I give herewith the formula for its preparation:

The materials required are:

1. Bismuth subnitrate, chemically pure.
2. Yellow petrolatum (best grade).
3. White wax.
4. A large porcelain mixing bowl.
5. A spoon.
6. A large enamel jar, with a cover, for storing the paste.
7. Several small enamel jars with covers for liquefying paste at the time of use.
8. Adhesive straps for the covers of the jars, to keep moisture and dirt from contaminating the paste.
9. Water bath for heating the paste.
10. Sterile rubber gloves, towels, etc., for aseptic technic.

Bismuth paste is a 10 per cent. mixture, one part of bismuth subnitrate to nine parts of petrolatum, with a small amount of white wax (2 ounces to 10 pounds of paste). The mixing bowls, jars and spoon are sterilized. The petrolatum is sterilized for twenty minutes in the original container in the autoclave. The bismuth subnitrate is sterile when it

comes from the manufacturer and so does not have to be resterilized. The mixing bowls and jars must be absolutely dry, as the slightest amount of water produces a curdling of the paste and it is then useless.

The bismuth subnitrate is poured into the mixing bowl and all lumps smoothed out with the spoon. A sufficient amount of petrolatum, which is still in a liquefied condition from the sterilizing, is slowly poured into the bismuth, to make a stiff paste. This mixture is then stirred for an hour until it is a smooth, bright, yellow, homogeneous paste. This is the most important step in the process, and if it is not carried out carefully, the paste will not be homogeneous.

To the balance of the nine parts of the liquefied petrolatum a small amount of white wax, which has been heated to liquefaction, is added (2 ounces to 10 pounds), and then this mixture is gradually added to the thick paste, being stirred constantly. The resulting product should be a light yellow, smooth, homogeneous paste, which, on cooling, becomes congealed without the precipitation of the bismuth.

From time to time, small amounts of this paste (from 8 to 10 ounces) are transferred to small jars in which the paste is liquefied and from which it is used. These jars should not be more than half full, and great care should be taken not to get any water into the paste while heating it.

The syringes that are used are both glass and metal, the barrel holding from one-half ounce to 2 ounces of paste. These syringes have different shaped points and nozzles, according to the demands of the case. The syringes are sterilized and kept in sterile towels until they are to be used, when they are filled with the liquefied paste.

EMIL G. BECK, M.D., Chicago.

"FOCAL INFECTIONS OF THE EYE FROM THE INTESTINAL TRACT"

To the Editor:—Apropos of Dr. J. G. Dwyer's article in THE JOURNAL, December 21, on "Focal Infections of the Eye from the Intestinal Tract," I recently had a case that illustrates the influence of gastro-intestinal toxemia in certain eye conditions:

A girl, aged 18 years, consulted me in the middle of April, 1918, because of typical serous iritis of the right eye for which she had been under treatment two weeks at a local clinic. There were by this time slight iritic synechiae and some corneal infiltration. Examination of the heart and lungs elicited nothing abnormal. The teeth were in good condition. The patient had slightly buried tonsils; there was no exudate either on the surface or in the crypts, nor was there a history of frequent attacks of tonsillitis. The nose as well as the neighboring sinus cavities were evidently normal, at least clinically so. There was no history of rheumatism or any joint affection. Menstruation was normal. In fact, outside of slight paleness due to the patient's rather sedentary occupation, that of a stenographer and book-keeper, the girl had evidently enjoyed good health until the present attack. She was put at once on the routine antiriritic treatment (calomel for the bowels, atropin in oil locally, hot applications, acetylsalicylic acid internally, dark coquilles, bland diet, etc.) and told to report to a local hospital for a Wassermann test, which was negative. A von Pirquet test yielded the same result. Under this treatment the eye seemed to be getting along quite well, as the patient, luckily, was in a position to give up her work and followed religiously the instructions given her, when she reported, May 27, with the unmistakable signs of a beginning iritis in the other eye. On inquiry she admitted that on the previous day she had had a heavy meal of meat and tomatoes, and later in the day had partaken rather freely of strawberries. A goodly dose of calomel with sodium bicarbonate seemed to put her on the right track again, and though the attack of iritis in this eye could not be prevented, the condition was under our complete control until a month later, when another gastro-intestinal indiscretion caused a slight exacerbation in both eyes, and retarded the treatment to some extent. A little later there developed a mild degree of optic neuritis, with blurring of the outlines of the disk and slight swelling of the nerve head, without, however, in any

way affecting the vision or the fields; by this time the deposits on the posterior surface of the cornea were almost completely absorbed. The recovery now continued uninterruptedly, and by the middle of August the patient was able to return to her work. A month later the outlines of the disk began to emerge, and the disk gradually took on its natural form and color. Potassium iodid was given during the last two months of treatment. I might observe that while under my care the patient had two marked attacks of urticaria.

The question in my mind is: Can a case of this kind really be called a focal infection, in the common acceptance of the term, or does it more properly belong to that class of disturbances, with the iris as the locus minoris resistentiae, caused by protein sensitization of ingested food? In either case the question opens up a wide vista of scientific investigation, on the results of which depends the solution of many puzzling pathologic phenomena.

ALEXANDER ROVINSKY, M.D., New York.

TREATMENT OF INSOMNIA

To the Editor:—I have read with interest Dr. Mautz' letter on insomnia in THE JOURNAL of December 14. In my own case (I am of a nervous temperament) business affairs have often produced a sleepless night. I have tried counting, deep breathing, etc., (and have avoided drugs) without success. I have also tried getting up and walking around for a while, only to resume my busy thoughts on returning to the pillow. Suddenly an inspiration: Get out of bed; become interested in some humorous story, such as one of Mark Twain's; get to laughing; go to bed with a good giggle on; Morpheus takes a grip on the throat of business, and there you are—asleep.

S. C. PRIEST, M.D., Newark, Ohio.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

COMMISSIONS IN THE RESERVE CORPS, INACTIVE

To the Editor:—A number of physicians who volunteered their services during the war received notices that they had been recommended for commissions, and that commissions and orders would be issued through the Adjutant-General's Office. In many cases the commissions and orders were not received and, of course, will not be received since the armistice has been signed. Most of these physicians had fully prepared themselves to report for duty at a greater or lesser sacrifice. They no doubt will be very grateful to have the government recognize their willingness to assist in the emergency. Would it be reasonable to expect the government to issue the delayed commissions, and immediately on acceptance, to muster out the recipients? This mark of appreciation would entail very little extra work, and no expense.

W. L. R.

ANSWER.—We are informed that the War Department will probably issue commissions in the Reserve Corps, inactive, to those medical men whose applications for appointment had received the final approval of the Surgeon-General on or before Nov. 11, 1918. There may, of course, be some delay in the issuing of these appointments. If nothing is heard from the War Department within five or six weeks, the physician might well write directly to the Adjutant-General's Office, detailing the circumstances and requesting the issuing of the commission.

LITHIUM CARBONATE—PHENOL CRYSTALS

To the Editor:—1. Is not lithine carbonate, as mentioned in Current Medical Literature, Nov. 9, 1913, p. 1620, Abstract 109, lithium carbonate? 2. What is glacial phenol described in Abstract 45, p. 1616?

F. M. P.

ANSWER.—1. The Spanish term used is "carbonato de litina" and in the French summary given with the article the chemical is designated "carbonate de lithine." Both of these terms are the equivalent of lithium carbonate, which should have been the English word used.

2. The French term "acide phénique neigeux" should have been translated "phenol crystals."