

PRACTICAL PHARMACY AS PRACTICED IN FREE HOSPITAL AND CLINIC OF JEFFERSON DAVIS HOSPITAL OF HOUSTON, TEXAS.*

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In presenting this story from behind the scenes of a Hospital Drug Room, which also serves as a free clinic for a city of some three hundred thousand population, Houston, Texas, where 18 clinics meet in the Drug Room, the author will endeavor to record as simply as is possible the duties and practices that are almost daily routine. This work calls for the maximum in efficiency, accuracy and honest endeavor.

For the last 18 years drugs have been given to the poor of Houston through the clinics, on prescription only; but a few months ago it became necessary to make a small charge, not exceeding 25 cents, coded by A to F on prescriptions—A is no charge, from B to F there is an increase of five cents, making F the maximum of 25 cents. This rating is made according to the salary received by the patient. Most of the prescriptions come through as A and a very few as F: many are marked B, which is a charge of 5 cents per prescription. Some of the blanks carry more than one prescription. The rating is given by a clerk who has access to the charts. This clerk's office is marked No. 2; then the patient takes the prescription to another clerk at office No. 3, who collects and stamps the prescription as paid; also marks it paid if there is no charge, which indicates that the prescription has been o.k.'d for filling. The patient is given a drug number by the call clerk or one of the two registered pharmacists; this number must be returned the same day by 5:00 P.M.

During clinic, from 15 to 25 prescriptions are taken in at a time, issued in a bunch by the call clerk who only calls out the Drug Room prescription number, which is written on the prescription for that day only and if more than one prescription, the same number appears on each label of the medicine in the upper left-hand corner. There are two windows from which patients are served, one for the white patients and the other for colored. Numbers begin with 200 to 400 and 300 to 500, in order to have no conflict with clinic numbers, which begin with 1 on up to 300 to 500 per day. So far there has been no conflict in calling the same numbers. Another reason for the smoothness of this number system is that the numbers are not consecutive as in the clinic. The number system is good, it is almost impossible for an error of delivery to be made, because as the number is issued it is written on the prescription in sight of the patient, who has learned to check his number. After the patient receives his number, he has the privilege of waiting for the prescription or calling for it later; it is preferred that the patient wait, as it obviates additional work.

In a clinic like this, speed is of importance; therefore all prescriptions are filled as promptly as possible. All prescriptions filled are coded, if possible, and placed next to the patient's issue number. This code is used in refilling and as a check against error.

The prescriptions are inverted as they are taken in so they can be issued with the least delay to the patient; in other words, first come, first served, whenever possible. One of the pharmacists takes all of these prescriptions, beginning with the bottom one first and writes labels for them according to the directions thereon, and wherever possible, affixes a code for the pharmacist only. This code, or part of it, is given in a formulary used by the clinic and the hospital. Some prescriptions that cannot be coded are not refillable. Most of the prescriptions are supposed to come from the clinic and hospital formulary either by number, code or writing the prescription as found in the book. The code is preferred. As fast as the labels

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are written, the prescriptions are filled from the coded labels. Perforated gum labels are used. Twelve labels $1\frac{1}{2}$ by 2 inches to a sheet and only six are written on one side before any are detached. The labels of the entire sheet are detached and placed upside down in a container where they remain until taken up for filling. When a smaller label is required, it is cut down after it has been written. There are two moisteners to take care of these labels. On the prescription counter there is a stack of labels instead of prescriptions. In a few minutes many rows of filled prescriptions will be on either side of the pharmacist, in the order that they came in. To his right are the odd numbers for the colored patients and to his left are the even numbers for the white patients. The call clerk calls the numbers at the proper window which is checked by the number of the patient that has been issued to him. The call clerk must keep up the stock of filled prescriptions such as cough syrups, pills, etc. The pharmacist attaches the label and checks them; no time is lost, for many are waiting for their medicine, and the sooner they leave the window the better it is for those coming after them. Many prescriptions have to be compounded immediately and these usually are the ones that cannot be coded. Whenever possible, they are filled as soon as possible, as they require more time. Most of the prescriptions, of course, are compounded in advance and placed in proper containers by the call clerk for future use. He usually fills a whole carton of containers as he finds time to do so. Not all prescriptions can be filled and shelved, as they require extra time in filling and compounding.

Sixteen one-pint graduates, with extra long lips, must be in readiness with preparations therein for that day only. The gallon bottle is beneath this shelf and near to the graduate for speeding the dispensing. These graduates are placed in a long straight row with enough space for easy handling, with the code at the foot of each graduate. No two preparations of the same color are permitted to stand side by side. This is another way to avoid errors and to speed the work. These graduates are emptied each evening into the gallon bottles. The preparations therein are as follows: (Note color and code.)

Mineral Oil (Mo), clear; Cascara (Cs), black; Dobell's (Do), clear; Anti Rheumatic (Ar), dark amber; Solution Bromide (Br), clear; Diuretic (D), medium amber; Solution Pheno-barbital (Pbs), red; Elixir I. Q. S. (T), greenish; Cough Syrup (C), reddish brown; Liniment (L), pale amber; Narcotic Diuretic (NcD), dark; Cod Liver Oil (Clo), clear; Calamine Lotion (Cl), cloudy pink; Brown Mixture (Bx), muddy brown; Vincent's Gargle (Vg), faint amber; and Milk of Magnesia (M), milky. These are used often and any combination can be made without going to the bottle. As an example, the doctor orders Cascara and Milk of Magnesia mixture; pour out the right amounts from the graduates into the prescription bottle, and the prescription is filled. All of the prescriptions from the book are for simple drugs. Very few proprietaries are used. Most preparations are of our own make and formula, or of the U. S. P. and N. F., which are also made by us when possible. The monthly average of 26 days of prescriptions filled is about 15,000 and preparations manufactured by us over 1900 per month. Prescriptions per day run around 500 to 600; one time 998 prescriptions were filled which required an extra hour.

The drug room hours are from 8:00 A.M. to 12:00 noon and 1:00 P.M. to 5:00 P.M. No one is allowed in the drug room. No prescriptions are received over the telephone except on real emergencies. Pharmacists are subject to calls after hours only when there is an emergency. Outside of drug-room hours, all emergency prescriptions are filled from a cabinet in the emergency room by the emergency doctor who carries the key and leaves a prescription for the same. The cabinet contains

about 20 prescriptions that will meet most any emergency case or hold the patient over until the clinic opens. The cabinet is kept up daily by the drug department, also vaccines and serums, for when the pharmacists leave, the drug room is locked.

Most of the preparations are of hospital formulas which are made up in pints, quarts, gallons, pounds, 5 pounds, 25 pounds and 50 pounds. Very few pharmaceuticals are purchased. The following preparations will give an idea of the amounts used per month, that are mostly dispensed on prescriptions. (Note code and part formula.) Fifteen gallons Diuretic (D)—20 grains of potassium acetate to the drachm, colored with cascara, to medium amber; ten gallons solution phenobarbital (Pbs)— $\frac{1}{4}$ grain to the drachm; Elixir I. Q. S. 10 gallons (no sugar) (T); 10 gallons Dobell's Solution (Do); 15 gallons Anti Rheumatic (Ar)—15 grains sodium salicylate, 5 grains potassium acetate to the drachm, colored with cascara to dark amber; 10 gallons solution sodium bromide (Br)—20 grains to the drachm; 10 gallons Cough Syrup (C) colored with red and caramel; 5 gallons Liniment (L)—contains oil of mustard and known as snake oil; 5 gallons (NcD) Narcotic Diuretic—contains 5 drops of tincture of opium to the drachm, also known as G. U. Sedative; 5 gallons Calamine Lotion (Cl) no phenol; 5 gallon Vincent's Gargle (contains Fowler's solution) Vg; 35 pounds of Sippy's powder; (No. 1) 1 Magnesium oxide and 3 Soda (known as alkaline powder); 25 pounds Sippy's powder No. 2 (No. 2)—1 Calcium Carbonate and 3 Soda; 25 pounds Gc Douche powder (contains menthol) (Gc); 45 pounds scabies ointment (Sc)—contains precipitated sulphur; 45 pounds of Ammoniated Mercury Ointment (Am); 15 pounds Whitfield's Ointment (Wo)—contains salicylic and benzoic acids; S. S. K. I. (Saturated solution potassium iodide) 2 gallons with 20 grains of sodium thiosulphate added to prevent discoloration (Ki); 2 gallons vanilla flavor, mostly for kitchen; 1 pint orange flavor for drug room only; 4 gallons Tincture of Iodine; 10 gallons Theobromine and Phenobarbital (ThPb)— $\frac{1}{4}$ grain of phenobarbital, $7\frac{1}{2}$ grains theobromine-sodium salicylate to the drachm; 1 gallon Diluted Hydrochloric Acid; 75 pounds Unna's paste (paint) for surgical boots (contains $\frac{1}{4}\%$ phenol). The Unna's paste and Elixir I. Q. S. are the most difficult to make, as both require heat and much time to make them into elegant preparations. Heat must also be used with Iodine Ointment, Analgesic Ointment and Camphorated Oil. Usually $37\frac{1}{2}$ pounds of Unna's Paste is made up at a time with $\frac{1}{4}\%$ phenol added as a preservative and placed in empty one-pound Dextri-Maltose cans.

There is no machinery. All preparations are made up by hand. It has been said that our department has learned to do as much with an ice pick, a spoon and other household utensils in the pharmaceutical laboratory as others who have expensive and elaborate equipment.

It costs the drug department about \$2200.00 per month for its drug items, including vaccines, serums and containers. The following purchased items are used per month: Ten cases of 24's 1-lb. Arm & Hammer Soda; 2 gallons red coloring; 300 pounds boric acid, powdered; 15 gallons glycerin; 120 gallons alcohol; 30 pounds liquid phenol; 16 dozen tetanus anti-toxin, 1500 unit vials; 160 vials insulin, U 40-10 cc.; 15 gallons mineral oil; 5 gallons aromatic cascara; 10 gallons milk of magnesia; 30 gallons liquor cresolis compositus; 10 cs 12's 6 ounce yeast powdered; 28×2 ounce jars of bismuth salicylate cream; 48×3 Gm. arsphenamine ampuls (these two items are used in venereal clinics); 4 pounds silver nucleinate (Agl); 10 gallons cod liver oil; 12×50 cc. vials perferingens anti-toxin, procaine hydrochloride $\frac{3}{4}$ pound and sodium phenobarbital, powdered $\frac{1}{2}$ pound.

The purchased items run over 600; 220 are chemicals, 19 vaccines and serums, 21 acids, 20 hypodermic tablets, 79 ampuls, which include some vials for hypodermic use only, 26 fluidextracts, 63 tablets and pills (different sizes of same not included), powdered crude drugs, few tinctures, fixed oils, essential oils, magmas, few proprietaries, white and yellow petrolatum, lanolin, few oleoresins, paraffin, cacao butter, yellow and white wax and three ointments, complete the total. Of the animal crude drugs or animal substance there are six, ovarian, mammary, thyroid, pancreatin, pituitary and pepsin. There are two powdered extracts, ergot and nux vomica, and one solid extract, ergot.

Many tablets and a few pills which are prescribed must be purchased. Those most commonly prescribed (with amounts per month and code) are aspirin compound (Apc), 10 thousand;

aspirin (As) 8 thousand; phenobarbital $1\frac{1}{2}$ grain (Pb); 2 thousand liver pills (Ox), known as oxgall compound; 1 thousand quinine sulphate 5-grain pills (Q) 8 thousand; C. R. C. (Cr) 1 thousand; amidopyrine (Pyr) 1 thousand; methenamine $7\frac{1}{2}$ grains (Hx); 2 thousand methenamine and sodium acid phosphate 5 grains each (HxPs) 8 thousand; thyro-ovarium (To), $\frac{1}{4}$ grain thyroid, 5 grains ovarian substance 4 thousand; ovarian 5 grains (O) 1 thousand; ammonium nitrate (An) $7\frac{1}{2}$ grains, enteric coated 2 thousand; 2 thousand potassium permanganate (Km) 5 grains; digitalis $1\frac{1}{2}$ grains (Di-t) 8 thousand; morphine sulphate hypodermic $\frac{1}{4}$ grain 15 hundred (mostly used in hospital and emergency room). A great variety of ampuls are used. The ones commonly dispensed in large amounts per month are as follows: Caffeine and sodium benzoate $7\frac{1}{2}$ grains 200 ampuls; 300 glucose 50%, 50 cc.; 200 pituitary extract O. B. I. cc. Of the narcotics per month: $\frac{3}{4}$ ounce morphine sulphate, large cubes; cocaine hydrochloride powdered, 2 ounces; pantopon hydrochloride $\frac{1}{2}$ ounce.

Of the many drugs, a few are called "Rare Drugs," as they are rarely used: Asiatic pills, chromium sulphate 4 grains coated tablets, barium chloride, bismuth oxychloride, potassium chloride, potassium sulphate, aluminium hydroxide, ethyl acetate, thallium acetate, potassium bicarbonate, ferrous chloride, phosphoric acid, galactose, quinine tannate, sodium phosphate, sodium acetate, iso-propyl alcohol, calcium bromide, oleum russi, oleum thuja, acid hypophosphorous, acid pyro-gallic, eugenol, fluidextract stramonium, calcium diphosphate, fluidextract xanthoxylum, tincture kino, fluidextract tolu, glycine, sodium sulphide, sodium formaldehyde sulphoxylate, malachite green, mercury oxycyanide and nupercain. If time permitted, it would be interesting to know how and why used, and the good and bad results of these drugs.

There are stocked 16 powders, which are made by the pharmacists. Some of the N. F. and U. S. P. have been slightly changed to meet the requirements of the hospital medical staff. There are 38 ointments, 21 tinctures and 26 fluidextracts kept in stock.

In order to speed up the dispensing the following solutions and preparations are kept in pints: (Note code.) 50% ammonium chloride (E), alcohol and boric (A*B)—50% saturated solution boric acid, alcohol and bichloride (1:1000) (A*Bi), aromatic spirit of ammonia (aSa), tincture belladonna (Be), tincture benzoin compound (Bz), iodine drops (Id), tincture opium camphorated (Pg), 75% chloral hydrate with glycerin added, tincture digitalis, fat-free (Di), ear drops (Ed), ephedrine in oil 1% (Ef-o), ephedrine drops (Ef-d), tincture hyoscyamus (Hy) tincture iodine (I), 75% iron and ammonium citrate (Fec), Lugol's solution (Lu), nose drops (Nd), 50% sodium thiocyanate, 100% potassium citrate (Kc), salicylic and alcohol (S*A), 75% sodium salicylate (S), 75% sodium citrate (Nac), syrup ferrous iodide (FeI), S. S. K. I. (Ki) saturated solution potassium iodide, 75% theobromine-sodium salicylate (Th), stomatitis swab (Is), tooth-ache drops (Td), syrup ipecac (Ip), zinc eye drops (Zc); in quarts: alkaline cough (Ac), alkaline anti-spasmodic cough (Ac 2), astringent gargle (Ag), solution aspirin (As-s), anti asthmatic (Ast), bitter cascara (Cs-b), solution benzoate and salicylate (B*S), anti nausea (C*A), baby iron syrup (Fe), calamine liniment (Cl-l), liver compound (Nb), syrup hydriodic acid (Hi), elixir cramp bark compound (K), kaolin magma (Ko), liquid cold (L-c), elixir lactated pepsin (Lp), milk of bismuth (Bi), mix treatment (Mt), bismuth and paregoric (B*P), high blood pressure (Hb), mercurochrome 5% (M 5%), refrigerant No. 2 (Refri. No. 2), and zinc oxide lotion (Zo-1).

Besides filling prescriptions for the clinic the pharmacists have to fill daily eleven ward baskets of the hospital which have an average of 3300 items per month, many items in the form of prescriptions. The time for this work is limited to one hour, from 8:00 A.M. to 9:00 A.M. Sometimes the hospital "wants" and prescriptions are so heavy that it will be noon before one of the pharmacists can complete them. No basket is allowed out of drug room until completed, but an item or prescription may be removed by the pharmacist if in great need. There are other institutions that must be taken care of during the day with wants and prescriptions that are outside of this institution. These wants are brought in by the outside nurses or a person who has been assigned to that duty by that institution, and who picks up prescriptions then or later, depending upon the kind of case and the urgency of the drug. These institutions do not have to pay for the drugs. They are as

follows: Crittenden Home, convalescent homes (7), city jail, county and city nurses, tubercular clinic nurses, fire department, city health department, catholic clinic (although they take care of package items themselves), and health center prescriptions when patients cannot have them filled in a drug store of their neighborhood.

Between the hours of 9:00 and 10:30 A.M. the department has the rush on refills. No narcotics or barbituric derivatives are refilled, and are marked "No Refill." After three refills, patient must see the doctor again and is forced to see him, for the code on the label is scratched. No stomach, cardiac or pellagra case is scratched, as their treatment is long. The daily average on refills is about 125 prescriptions. The new prescriptions are taken in first so the labels can be written, while refills are filled in same container, patient by patient, if possible.

Three placebo prescriptions have been made with the hope of cutting down on refills. They are: Placebo Number one (tr. nux vomica, drachm 1, green coloring drops 1 aqua q. s. ounces 3), Sig: Drachm 1 three times a day; placebo Number 2 (oleum ricini, fluidextract asa-fœtida, ether, elixir ammonium valerate, aa q. s., ounce 2. Sig: one drachm *t. i. d.*; Placebo Number 3; croton oil 10 drops, oleum chenopodium one drachm, red coloring oil soluble 5 drops, mineral oil q. s. 2 ounces, Sig: one drachm every three hours, Number 1 placebo usually comes back all three times for refill and receives a new order; Number 2 comes not over three times and Number 3 never comes back.

All refills must be out by 10:30 A.M. and not received after this hour except on extreme emergencies. Every minute counts, as there are new prescriptions to be filled at the same time, and morning clinics must move out to make room for the large afternoon clinic. All prescriptions must be counted daily and classified in eleven departments with subhead of other institutions, which is included in the grand total of prescriptions filled per day. A record is made of preparations manufactured by us. The classification of prescriptions is as follows: Number of prescriptions to clinic patients, out-patients, hospital patients, hospital employees, venereal clinic patients, narcotics, ward baskets, barbituric derivatives, City doctors' patients, emergencies, vaccines and serums (which include insulin prescriptions). A total of institutions is kept separate, but included in the grand total under out-patients.

The outside doctor deals the drug room miserly, on account of the limited stock and simplicity of drugs and preparations. These require changes, so the doctor has to be called, or may, if possible, have the hospital chief doctor change the prescription in case the outside doctor cannot be located, if the patient is willing for a change to be made. The therapeutic value is not altered. Capsules are filled by patients wherever possible, especially if it be a long treatment and a great number are required. As yet we have not found any patient unwilling to fill his own capsules. For instance, we have a number 12-size capsule for vaginal insertion, used in treatment of *trichomonas vaginalis*, which contains glucose 2, starch 1, boric acid 1 and $\frac{1}{10}$ grains arsenous acid, to each capsule. This powder mixture with the empty capsules and directions on label "insert at night after hot douche," is given to the patient.

There are 8 capsules as follows: (Note code and formula.) (AH) analgesic hypnotic (phenobarbital $1\frac{1}{2}$ grains, amidopyrine $3\frac{1}{2}$ grains); (Thy) hook worm caps (powdered thymol 5 grains); (Tw) tape worm (oleoresin aspidium $7\frac{1}{2}$ drops); (Mw) mixed worms (oleum chenopodium and carbon tetrachloride in mineral oil); (A. Q. D.) cold Nc caps (aspirin, quinine, Dov-

er's powder; (A. p. c) capsules or Nc capsules (aspirin, phenacetin, codeine phosphate ($\frac{1}{2}$ grain) or pantopon ($\frac{1}{8}$ grain)); (PMP) endocrine hemorrhage or organic uterine hemostatic (placenta, mammary, pituitary substances) and (Ob) obstetrical capsules (powdered extract ergot, powdered extract nux vomica, quinine). These capsules are kept filled in the dispensary. Capsules for tape worm and mixed worms are filled when ordered, as they contain liquids. All of these capsules are filled whenever time permits, otherwise at home.

On all prescriptions, wherever possible, the pharmacists dispense liquids, as this speeds up the work. For instance, the so-called themoninal tablet is ordered, liquid is dispensed, which has nearly the same therapeutical value; (a 4-ounce solution of theobromine—sodium salicylate $7\frac{1}{2}$ grains and phenobarbital $\frac{1}{4}$ grain to the drachm.) All changes have been pre-arranged with all the doctors on the staff and as many of them are uptown doctors, who are in the habit of writing for proprietary pharmaceuticals, which of course does not conform with the hospital formula.

Salesmen or detail men are allowed to see the pharmacist between 9:30 and 11:30 A.M., but outside of the drug room.

The charging for drugs or certain prescriptions is not new. In 1919, there was a charge for morphine sulphate to addicts at 10 cents a grain, with the idea of eliminating or decreasing drug sales of this sort on the streets. The results were of no avail; although 122 addicts were removed from the streets, who were served with their daily amount of morphine in solution for hypodermic use. There was another side to this kind of treatment, in that the dosage was reduced by $\frac{1}{8}$ grain daily, without the knowledge of the addict, until only water was issued. Only two patients got down to water. One died and the other received an extra supply through the street trade. This clinic only lasted a few months, as it had to be closed on account of bad results. Some of the patients got as high as 20 grains per day; none under 1 grain. This was extra work, for there was only one pharmacist at that time. All the vials had to be sterilized, and filled daily. Only one hour in the morning and one in the evening was allowed for these poor addicts, and a receipt had to be issued to each patient and a check kept on them, as they had to report daily. The closing of the narcotic clinic was one of the happiest days in the life of the author, as there was plenty of grief attached and extra hours without compensation.

It is hoped that the small charge made for drugs will enable the hospital to decrease the clinic patients who are habitual ambulatory cases. Besides prescription charges, there is one on vaccines and serums; \$1.00 for tetanus antitoxin, 1500 units; \$1.50 on ten thousand, diphtheria anti-toxin; \$3.00 on twenty thousand units. Of course, if the patient cannot pay, no charge is made. Insulin is 60 cents for a 10-cc. vial U40. All hypodermics which are administered in emergency room are graded the same as prescriptions, from 0 to 25 cents. Hospital patients get everything free.

Now a little comment on the book of formulas as used in Jefferson Davis Hospital. In order to curtail the stock the hospital compiled formulas to meet all demands. Two hundred and fifty-one formulas were placed in the form of prescriptions with a number and a code above each. Since then it has been necessary for more formulas to be added; and the book is now in its revision. The book has a cross index and is almost a little library in itself, with baby feeding and an index of diseases with remedies. The remedies are in the form of prescriptions which are numbered for quick reference. The code is of interest, in that it has some relation to the drugs or their action and that is why we prefer code if the prescription is not written. Numbers are deceiving, especially the way some of the doctors write them, and, too, he may memorize the number and get the wrong one, whereas with the code the doctor can't go wrong. For instance, the doctor wants a pain killer as aspirin compound. The code would be APC (aspirin, phenacetin, caffeine), or say Liquid ache (L-a), (antipyrine, sodium bromide, caffeine in elixir lactated pepsin). The first prescription is number (7) and the second is number (8). Suppose

the top of the 7 was not clear, then it would look like prescription number (1); or the bottom right half part of the 8 was not clear, then it would look like prescription number (9). In number (8) the doctor wanted a liquid, but got tablets; in number (7) the doctor wanted a tablet, but received a powder. In the foreword of the book is printed the following:

"This book of Formulas is prepared for our doctors, giving them an idea of the kind of stock that our budget will allow us to carry in the drug room, thereby making it convenient for them to write prescriptions. In the back of the book are blank pages for new prescriptions. Please consult the pharmacist so that he can plan with you about the stock.

"In writing prescriptions, if the doctor so desires, he may use the code or number of the prescription as found above each formula. Code or number will enable the pharmacists to work at a greater speed and get the patient back home at an earlier hour. The doctors are invited to write prescriptions in standard amounts as much as possible, so that the drugs may be prepared in advance."

Some of the preparations require special treatment. For instance, the eye solutions. They are strained through several folds of gauze bandage and cotton to remove any mechanical trash or foreign body.

Solutions are made with 2% boric acid and glacial acetic acid added, one drop to the ounce. This acidifying of eye solutions helps to keep them clear and colorless, especially eserine preparations. If a preparation of liquid type has to be kept for any length of time or has to be sterilized, chlortone is added, one drop to the ounce of a saturated solution in alcohol. Alcohol is employed freely to clear up solutions wherever possible. Glycerin is used instead of sugar or syrup, especially if a preparation has the tendency to be "rough" or "raw." It seems to give it a smoothness that would otherwise be objectionable. Castor oil is used to start off ointments and the finished product is like velvet.

The labels for the hospital have one or more names and in cases of percentage solutions or other preparations, the figure is used with the per cent sign and beneath this in parenthesis the number or strength is written out. This usually removes the doubt. For instance, a 10% solution could be taken for a 1% solution if the O was faint or entirely gone, but the word beneath it as (ten) or (one) makes the label clear.

A combination of flavors and colors is employed wherever possible, in making liquid preparations. Sometimes two flavors are blended or two colors making a different shade. Then again an orange flavor may be red instead of orange or made dark lavender.

In the delineation of these multitudinous services rendered by the drug room or dispensary, you have probably gained the impression that quite a large staff is required; strange as it may seem, two pharmacists and one helper constitute the entire drug room personnel. One is a graduate pharmacist, one a registered pharmacist and the call clerk is the only other helper.

The problem of insect quarantine will be studied by coöperation of Pan-American Airways, the United States Department of Agriculture, the Hawaiian Board of Agriculture and Forestry and the Hawaiian Planters' Association. Officers of the territorial plant quarantine service are required now to inspect rigidly every transpacific plane reaching Honolulu.

A new museum building, for which plans have been completed, will be erected this spring at Sul Ross State Teachers College, Alpine, Texas. It will be known as the Big Bend Historical Memorial and will house the West Texas Historical and Scientific Society which now has headquarters and collections in the administration building of the college.