

R 21	Holocain Sol. Merthiolate (1:1500) ad	$\frac{1}{2}\%$ oz. I
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Dissolve the holocain in 10 cc. of distilled water. When the solution is added to the merthiolate solution, a heavy precipitate is formed. This is not fit for use in the eye. Therefore, add a few drops of boric acid sol. to clear up the precipitate.

R 22	Chloral Hydrate Sodium Bromide Aromatic Elixir ad	dr. IV oz. I oz. IV
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The low alcoholic elixir should be used to prevent any separation.

R 23	Castor Oil Spirits Turpentine Stronger Ammonia Water, aa ad	oz. III
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If prepared as written, a heavy sediment forms on standing. This sediment makes it difficult to pour the mixture from the bottle. Mix the castor oil with the stronger ammonia water *very well* and then add the turpentine.

R 24	Suprarenal conc. Thyroid Acid Acetylsalicylic Codeine sulf. Aloin, aa Ammon. Carbonate divide in caps. No. XXX	gr. X gr. X gr. LXXV gr. V gr. L
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Mix all the ingredients except the ammonium carbonate together and dispense in a larger size capsule. Separately, place the ammonium carbonate in a very small capsule and place the small capsule in the large capsule. No reaction will take place and the capsules will keep indefinitely.

R 25	Tr. Nux Vomica Fe. et Amm. Citrate Chloral Hydrate Ovoferin ad	10.0 1.5 1.5 120.0
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Tr. Nux Vomica and iron and ammonium citrate react upon each other, causing a precipitate which imparts a cloudiness to the whole solution. Therefore, be sure the Tr. Nux Vomica is well diluted in Ovoferin and add it to the other ingredients lastly. Also, it is advisable to check the freshness of the Ovoferin.

HOSPITAL PHARMACY INTERNESHPIS.*

SOME NOTES ON THOSE HOSPITAL PHARMACY PRACTICES HAVING A PARTICULAR VALUE AS POSTGRADUATE EXPERIENCES.

BY H. A. K. WHITNEY.¹

In that excellent chapter on "Hospital Pharmacy" (1), Dean Spease has written that "Pharmaceutical Educators recognize the value of the special training that a hospital pharmacist receives while serving his internship. His new understanding of scientific medicine, rational therapy and the needs of physicians help him vastly in the practice of true professional Pharmacy outside of the hospital."

* Presented before the Sub-Section on Hospital Pharmacy, A. Ph. A., Minneapolis meeting, 1938.

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"The man or woman to fill the position of hospital pharmacist should, of course, be a graduate of an accredited school of pharmacy and a legally registered pharmacist. For experience, graduate work in Pharmacology, Physiology, Pathology and Anatomy would be helpful, and a knowledge of Business Administration would be desirable."

Since the practice of Hospital Pharmacy has been discussed many times before professional groups, it is not my intention to review or repeat such discussions here. The material just referred to provides a sufficient and standard guide for the operation of such a specialized service. It is rather my intention to submit certain features and practices that have evolved in the operation of our own Hospital Pharmacy.

It should be interesting to give a bit of the historical background of this department. While the University Hospital of some twenty beds had been in operation for many years previously, it was not until the expansion of 1891 that the services of an apothecary seemed to be required. The Board of Regents of the University, having petitioned for and having been granted a newer and more commodious building, also made arrangements for providing the new institution with suitable professional services. In that year of opening the "New University Hospital" of some one hundred beds, the Board of Regents moved, in session assembled, "that the Executive Committee be authorized to appoint an apothecary in the University Hospital for one year at a salary of \$200.00 annually.

The Regents also adopted a set of "Rules and Regulations for the government of the Hospitals of the University of Michigan." It will be of present interest to extract from the rules those especially pertinent to the conduct of the apothecary. These rules follow:

The Apothecary.—The Apothecary shall be subordinate and responsible to the Resident Physician. He shall have the immediate care and custody of all drugs, medicines and other articles belonging to the Department and be responsible for the same. He shall compound and make up all medicines, which may be prescribed, with exactness and promptitude. He shall deliver no medicines and other articles unless the same shall be duly entered upon the Prescription or Order Book or ordered in writing.

He shall arrange the medicines intended for each ward separately, and shall annex to the labels containing the names of the patients for whom they are respectively prescribed, written or printed directions for their use. He shall deliver them promptly to the nurses of each ward to be by them administered to the patients.

He shall be responsible for the correct preparation of all prescriptions.

He shall have charge of all the instruments belonging to the hospital and shall be responsible for them and their good order. He shall keep an account of them and shall never allow them to leave his possession without taking a proper receipt or ticket from the person so taking them. He shall make an inventory of all instruments belonging to the hospital when he enters upon his duties and on giving up his charge he shall furnish the Superintendent a like inventory counter-signed by the Resident Physician.

He shall keep the dispensary and everything pertaining to it clean and in perfect order, and the same shall remain open from 8:30 A.M. to 8 P.M. in his charge. He shall observe economy in everything relating to his department, be particularly careful in the preparation and delivery of medicines and permit no noise, confusion or disorder in his premises.

With but trivial modifications these Rules and Regulations are quite as useful to-day as they were nearly fifty years ago. A pronounced evolution has shown itself in the organization of the Hospital Pharmacy Staff and to understand some of the present practices it must be remembered that the department has for some time

been operating under a "Plan for Pharmacy Internships" previously announced and published (2). This provides for an adequate Permanent Staff in addition to a present Temporary Staff of six so-called pharmacy internes who are resident with the medical internes. Let me acknowledge here and now that many of our post-graduate instructional activities are the direct result of the presence on our staff of this youthful, interested, ambitious pharmacy interne. I may further state that this interest displayed on the part of the pharmacy interne in these activities is the sustaining and encouraging stimulus that is required to carry this activity forward. Moreover, many of the instructional deficiencies that have been overcome are due directly to the attention displayed by the individual pharmacy interne.

Medical Nomenclature.—One of the first deficiencies coming to the notice of the pharmacy interne is his lack of understanding of medical terminology and the professional lingo of the medical interne. As an initial step this situation is met through the interesting method of requiring the pharmacy interne to acquaint himself with the "Operating Room Schedule" (Exhibit No. 1) that is published each

EXHIBIT 1.

OPERATION ROOM SCHEDULE. FRIDAY, JULY 29, 1938.

Thoracic. Surgery.

Brocklebank, Claude	423286	8	4th Stage Thoracoplasty	Alexander, Major	10:00	LcGs	18
Olanto, Fred	402650	8	1st Stage Thoracoplasty	Chamberlain, Brewer	8:00	LcGs	18
Meier, Eloise	416463	8	Schede Thoracoplasty	Haight, Sommer	11:10	LcGs	18
Beyen, Mae	312631	8	Bronchoscopy, Dilatation	Haight, Chang	12:30	LcGs	18

Oral. Surgery.

Weber, Ida	427215	6C	Staphylorrhaphy	Kemper, Hagan	8:00	Et	21
McMahon, Eunice	271801	6C	Cheiloplasty	Hagan, Harding	10:30	Et	30

day. To make certain such interest is sustained those of us on the permanent staff may daily require the explanation of some posted operation. The interne is requested further to determine the meaning of many of the common stems, prefixes, suffixes and abbreviations. His instruction is carried further by the established conduct in the Hospital Pharmacy, as for example, the use of such definite language as "inner canthus" not "corner of eye," "ptosis" not "drooping eyelid," "auricular fibrillation" or "cardiac decompensation" not just "heart disease" and so on. This should not be looked upon as a needless activity for it is always definitely informative and makes for a better interpretation of formal discussions and papers.

Operations and Autopsies.—To develop a better acquaintanceship with anatomy, physiology and pathology the pharmacy interne is encouraged and directed to attend, first of all, autopsies. Such examinations are frequently held at times when the pathologist can give some individual attention to the pharmacy interne and the obvious value of such teaching is inestimable. Later when the pharmacy interne is properly prepared to become an observer at some operation such participation is also encouraged. Emergency operations are especially interesting and useful for instruction. Exposure to experiences of such broadening influence is bound to have its effect on a better understanding by the pharmacist interne of all medical problems and situations. It may be well to note here that our entire medical and surgical staffs are very kindly disposed toward our department and the pharmacy interne is shown an attention that naturally is appreciated but, more important, is the effect of fraternity.

Medical and Surgical Staff Meetings.—During the course of the regular academic year each of the various departments of the hospital regularly holds scheduled staff meetings. These staff meetings are usually scheduled at weekly intervals and are, of course, concerned with the problems and proceedings of that particular department. For example, there are the meetings of the Medical Journal Club, Otolaryngology Staff Meetings, Surgery Staff Meetings, Clinical Pathological Conferences, Pediatrics Journal Club, etc. In addition, the School of Medicine promotes many extra-curricular activities and meetings such as the Biological Chemistry Seminar, Academy of Science, Annual Memorial Lectures and special lectures of many sorts. In any or all of these meetings or conferences there may be much for the intellectual profit of the Hospital Pharmacist. An even casual reading of the titles of material to be presented will lead to this positive conclusion. The pharmacy interne is therefore encouraged and directed to avail himself of these opportunities and usually is happy to voluntarily do so.

Pharmacy Staff Meetings.—This particular policy of the other Departments of Medicine in continuing instruction, discussion and conference, has led gradually to the development of meetings of the pharmacy staff. These meetings are generally in the charge of one of the Assistant Chief Pharmacists and take on the general nature of the round-table discussion. Mention might well be made of one unique method, developed by the pharmacy internes, for promoting these discussions and continuing their interest. A sealed box is placed in the department, convenient for the receipt of any written question that may arise in the mind of any one of the staff. On the other hand many questions are presented to various members of the staff by those with whom they come in contact and perhaps not feeling possessed of complete knowledge for a proper and intelligent answer the particular member may pass the question along to the group for subsequent consideration. The questions are unsigned and are offered as a challenge in the group meetings by the person in charge. The pharmacist placing the question in the receptacle is however supposed to be fortified with the proper answer. It is interesting to note that by far the greater number of questions submitted deal with therapeutic applications and procedures; a probable natural reaction to the type of questions placed before the pharmacist interne by the medical interne.

Miscellaneous.—In order to explain and clarify the environment of the pharmacy interne it may be well to speak of contributory conditions. Obviously much clinical experimental work is always going on in the hospital that proves of great interest to the pharmacy interne. The Hospital Pharmacy is equipped with an ample and modern library of texts and journals that serves to supplement the more expanded Hospital Library, which by the way is a branch of the University General Library. Also, and of greatest importance, is the fact that the pharmacy interne is quartered and lives with the medical interne, sharing his social life as well as his professional life. This latter situation goes far toward developing a mutual respect for their respective abilities and qualifications.

CONCLUSIONS.

It is presumed that the present-day pharmacy interne has a comprehensive training in pharmaceutical and organic Chemistry, supplemented by a serious

training in Pharmacology, to permit his necessary understanding and required evaluation of the newer therapeutic agents, that are mostly synthetic.

The pharmacy interne must of necessity learn the medical nomenclature and professional lingo of the medical interne as a conversational medium.

In adopting this conversational medium, the pharmacy interne can enjoy the medical meetings and discussions, be assured of a broader understanding of Physiology, Anatomy, Pathology and develop an expanded Pharmacology. His need for a broadened and modernized *Materia Medica* is unquestionable, since in effect he becomes a practicing pharmacologist.

It is further noticeable that the internist and the surgeon are ever willing to consult with the pharmacist on the most beneficent treatment for the patient. The pharmacist on his part must certainly be fortified with a complete and discriminating knowledge of all existing *Materia Medica*; must be able to understand the explanations and diagnoses of the physician or surgeon; and finally must be able to impart information that is intelligent and honest.

REFERENCES.

- (1) "Remington's Practice of Pharmacy," Cook and LaWall.
- (2) Whitney and Watts, "A Plan for Pharmacy Internships at the University of Michigan Hospital," JOUR. A. PH. A., 24, 852 (1935).

THERAPEUTICS COMMITTEE.*

BY ROGER K. LAGER.¹

A Therapeutics or Pharmacy Committee is a committee organized to promote rational therapeutics in a hospital. It is usually composed of several physicians and the Directing or Chief Pharmacist. Each physician on the Committee should represent a major service such as medicine, surgery, obstetrics and pediatrics.

The purpose of this Committee is to make recommendations to the Medical Council or Executive Medical Board. These should include: *first*, recommendations relative to additions to and deletions from the stock carried by the pharmacy of the hospital; *second*, the functions which it (the Committee) should assume; *third*, its policy of operation; *fourth*, such other recommendations upon pharmaceutical problems as from time to time may seem necessary.

The power of this Committee rests in its ability to make recommendations to the executive medical council of a hospital. By virtue of the fact that the Committee is composed of representatives of each major service and the pharmacy, its discussions must result in a more harmonious understanding and coöperation between the medical staff and the pharmacy.

The Committee should have within its scope the policy of operation of the hospital pharmacy, out-patient department pharmacy and professional stores providing the latter two are under the jurisdiction of the pharmacy.

It should include control over drugs, preparations and proprietaries carried and pharmaceutical products or sterile solutions manufactured by the pharmacy.

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