We have therefore prepared a solution containing Methenamine 3 Gm., Acid Sodium Phosphate 9 Gm., in Distilled Water 120 cc., and obtained a faint reaction for free formaldehyde immediately after mixing. The reaction, however, is much less intense than the one obtained in a solution of the same amount of methenamine in 0.2 per cent hydrochloric acid, which is approximately the acidity of the gastric juice. The reason for this can be readily understood when we compare the hydrogen-ion concentration of the two solutions. With the acid sodium phosphate mixture it is p_H 5.6, while the p_H of the hydrochloric acid mixture is 2.6 approximately. In the course of days, when kept at ordinary room temperature and in diffused light, the formaldehyde reaction in the solutions increases and possibly a very faint odor of formaldehyde becomes perceptible. However, when recently prepared, the acid-sodium-phosphate-methenamine mixture is not at all objectionable in odor or taste, and as it contains considerably less free acid and therefore less free formaldehyde than would be liberated in the stomach with its higher p_H content, it would seem entirely justifiable to administer it in this way.

In view of these facts, it seems that a formula for such mixture might be incorporated in the "Unofficial Formulary." We submit the following:

LIQUOR METHENAMINÆ ACIDUS

Acid Solution of Methenaminæ

Methenamine	8 Gm.
Acid Sodium Phosphate	24 Gm.
Distilled Water to make	100 cc.

This solution should not be dispensed unless recently prepared.

AVERAGE DOSE: 1 teaspoonful.

We have here an interesting example of a theoretic incompatibility of no practical importance.

HOSPITAL PHARMACY PROBLEMS.*

As Shown by the Inquiries Received by the Hospital Library and Service Bureau.[1]

BY HENRY J. GOECKEL.[2]

During the past few years several papers were presented at the conventions of the AMERICAN PHARMACEUTICAL ASSOCIATION and contributed to the JOURNAL, which discussed various phases of pharmacy education and practice in relation to hospital activities. As the writer believes that many of pharmacy's professional and educational problems as well as those of practical therapeusis can be solved in a satisfactory manner only when this branch of pharmaceutical activities is properly developed—he has given much attention to the subject. Having since the last Convention been called upon by the Director of the Hospital Library and Service Bureau for information to enable her to answer some inquiries on which no data

* Section on Practical Pharmacy and Dispensing, A. PH. A., Des Moines meeting, 1925.

[1] The Hospital Library and Service Bureau, located at 22 E. Ontario Street, Chicago, Ill., U. S. A., is maintained and supported by the various associations interested in hospital activities. One of the large educational foundations aided in its establishment.

[2] Consulting pathologist, Somerset Hospital, Somerville, N. J.

are available, I asked her to prepare a list of the headings under which information has been requested. As these inquiries will tend to show what are the present-day problems from an institutional view and at the same time indicate wherein our hospital pharmacists can help, I am taking this opportunity to bring them before the profession.

The inquiries can be grouped under five major headings which follow with a few comments on the same.

1—PHARMACY EQUIPMENT AND PLANS.

What is basic and essential and most practical as well as economical in installation costs, upkeep and labor? Many things essential or of value in a retail pharmacy can be dispensed with in a hospital. On the other hand better control and greater uniformity in demands gives better control of supplies, etc.

In the hospital where the writer was a pharmacist in the past we made all fluidextracts, tinctures, compressed tablets and ointments which were required in large quantities; large power tablet compressing machines were part of the equipment and power paint-mixing machines were used for the ointments. As every large hospital has its own power plant such installation is at times both economical and satisfactory.

2—PHARMACY MANAGEMENT.

The inquiries on pharmacy management can be divided into three sub-groups:

(*a*) *Methods of Staffing the Department.*—The qualifications demanded, the salary and the status of the pharmacist in relation to other branches of hospital service. Much variation will be found in this and also much need for improvement.

(*b*) *Methods for Filing Prescriptions, How Long Prescriptions Are Kept As a Record.*—If narcotic and regular prescriptions are filed together or separately. General systems employed so that any prescription two or three years old can be found easily. The writer's answer to this group of questions was as follows: "Prescriptions are not as a rule kept in the careful manner that a reliable pharmacist keeps them—for several reasons. It is a question whether the expense in labor is warranted. The department is often understaffed for greatest efficiency or the time can be used to better advantage. Most prescriptions and drug orders are usually written into the ward order book by the physician or supervisor, written on the case chart and, often, again written into an order book or on a special order form when sent to the pharmacy. In a hospital having a records'-librarian department, which every hospital should have to be permitted to function as such, the history file or the bedside chart is the correct place to seek this information. No one is justified in interfering with the activities of the several departments of the hospital by requesting reference to past orders. The case history is the place for this information."

(*c*) *List of Drugs and Chemicals Regularly Used in Hospitals.*—Relation of the present costs of drugs used in hospitals to that of the past years. This information is of value in the establishing of pharmacy departments; their standardization, for arriving at the cost of such service and for budgeting hospital income and expenses.

3—FACILITIES FOR HANDLING DRUGS ON VARIOUS FLOORS AND WARDS IN HOSPITALS AND IN CLINICS.

The above is a very important matter. While it is not strictly speaking a direct pharmacy department activity, it does affect the department directly. Carelessness and wastefulness increase the work and cost of the pharmacy service unnecessarily. On the other hand, poor systems of too rigid economy may hamper the service of the institution, effect no real saving and may lead to actual harm—where too much "red tape" is evolved by attempting to keep supplies in one central depot. The writer knows of an instance where forty minutes of the nurses' and the doctors' time was wasted in securing a strip of adhesive plaster. He also knows of another instance where neither amyl nitrite nor nitroglycerin was available in a clinic; by the time these were secured from the central depot, in the hospital, the patient was dead.

4—A LIST OF HOSPITALS HAVING RESIDENT PHARMACISTS.

The foregoing can be interpreted in two ways, as meaning those hospitals in which the pharmacist resides within the institution, or those employing pharmacists within the institution, instead of relying upon the nursing service to have entire charge of drug supplies or sending out to some local drug store for them.

Some of our states are very particular that many U. S. P. preparations be only dispensed in a retail pharmacy under the supervision of a registered pharmacist or by a registered assistant, but at the same time permit that all kinds of powerful and poisonous drugs be compounded and dispensed with impunity by unqualified persons in the hospitals of the same state.

5—NAMES AND ADDRESSES OF PHARMACISTS IN HOSPITALS THROUGHOUT THE COUNTRY.

A compilation of such a list as designated in the subdivision can, in the writer's opinion, be successfully prepared only by the AMERICAN PHARMACEUTICAL ASSOCIATION as part of a general directory and card index. This will, however, have to wait until the Pharmacy Headquarters' Building becomes a reality and a full-time secretarial staff is provided. The ASSOCIATION will then no doubt undertake to establish a card index giving the qualifications of all persons in the pharmaceutical industry and profession, as well as other data of value. At least one state[1] where periodic renewal of registration is required has issued a directory of all pharmacists and assistant pharmacists registered in that state.

A tabulation of all pharmacists in the employ of hospitals or who have been so employed will prove of value to the ASSOCIATION, especially in bringing about pharmacy internships—to provide means for securing adequate training in professional pharmacy and to establish the proper contact between the younger generations of physicians and pharmacists. To indicate a value for fostering closer association of such members I need only to quote from a recent personal communication from one whom the writer considers one of the most capable hospital administrators[2].

[1] New Jersey.

[2] S. S. Goldwater, M.D., Director of Mount Sinai Hospital, New York City.

"In the preparation of plans for a hospital one constantly faces demands which are far beyond the purse of the institution, and in the eventual adjustment of the program those demands are most frequently recognized which have the strongest support from the clinical and occasionally from the administrative staff. The pharmacy frequently gets less space than it ought to have, even for its routine work."

In an attempt to find out how many hospitals employ registered pharmacists the writer has consulted the Secretary of the National Association of Boards of Pharmacy[1] and has secured data from the Hospital Library and Service Bureau and elsewhere. The results of this investigation will be presented as a separate contribution.

SUMMARY.

This paper presents an outline of the hospital pharmacy problems of an administrative type as ascertained by a compilation of the requests for information on the subject received by the Hospital Library and Service Bureau.

Comments based upon the writer's experience are given.

EDUCATION FOR PROFIT.*

BY WORTLEY F. RUDD.

Manifestly this subject has more than one interpretation. It may mean profit to those who are educated, and certainly there is a decided net money profit to the educated on the one hand as compared with the uneducated on the other, *e. g.*, the average income of the untrained man is estimated at $1200 per year, that of the high-school graduate $2200, and of the college graduate $6000 per year. That means that in a lifetime, say 60 years, the total earnings of a man in each class would be $45,000, $78,000, and $150,000 respectively. Furthermore, it is estimated that while the untrained man at the age of 55 begins to drop towards dependency, a college man reaches his maximum earning capacity at 60.

Granted the relative accuracy of this data, education pays in money value certainly to those who receive the training.

Again, education for profit may be interpreted as referring to that great proportion of our people who are the beneficiaries at the hands of those who are educated. The sick get better service because doctors are better educated. Students are better taught by better educated teachers, and so on.

These, however, are not the interpretations which I desire to emphasize in this connection. I see in this subject a third possible interpretation, *viz.*, the profit that comes to those who do the educating. It is this interpretation and about this class that I want to speak very briefly.

Now what are the teacher's profits? Has he any? It is a terribly hackneyed subject; every teachers' convention discusses it; sob artists write poems about it; cartoonists satirize it. Educators themselves could probably form within their own group a great debating society with the ranks about equally divided on either

[1] National Association Boards of Pharmacy, H. C. Christensen, Secretary, 130 North Wells Street, Chicago, Ill.

* Section on Education and Legislation, A. PH. A., Des Moines meeting, 1925.