

## EDITORIAL NOTES

### A CORRECTION.

We are just advised by the authors of "The Effect of Cystine on the Toxicity and Trypanocidal Activity of Nearsphenamine," published on page 497 of the June 1937 JOURNAL, that certain errors were overlooked when they prepared the manuscript, and therefore they have requested us to publish the following corrections:

On page 500 in Fig. 1—the curve designated as representing the results obtained with 500 mg. of cystine is, in fact, the curve representing the control experiments, whereas the curve designated as representing the control experiments actually describes those obtained with 500 mg. of cystine.

In Fig. 3—the dosage of nearsphenamine was 7.5 mg. and 5.0 mg. and not two 7.5 mg. doses.

In Fig. 4—the dosage of nearsphenamine was 9.0 mg. and 7.5 mg. and not two 9.0 mg. doses. Also in Fig. 4—the percentage of trypanosome infected animals surviving after 27 days, having received one 9.0 mg. and one 7.5 mg. dose of nearsphenamine and 250 mg. doses of cystine, is 57% and not 43% as shown in the curve.

### ANNUAL CENSUS OF PHARMACY BY THE NATIONAL ASSOCIATION BOARDS OF PHARMACY.

BY H. C. CHRISTENSEN, SECRETARY.

During the calendar year 1936, the boards of pharmacy of the 48 states and the District of Columbia registered 3096 pharmacists by examination. This represents the new blood entering the profession and includes no reciprocal registrations, as the latter represent a redistribution of pharmacists already on the roster.

In a paper read at the New York convention of the AMERICAN PHARMACEUTICAL ASSOCIATION (Section on Education and Legislation—1937) Secretary E. F. Kelly estimated the necessary replacement figure at from 3 to 3½% of the total of 100,000 pharmacists. Thus the 1936 figure on board registrations amply covers the replacements, but makes no allowance for further expansion.

The Census of Pharmacy students tabulated from questionnaires submitted by 69 colleges of pharmacy receiving board recognition gives the total enrollment of 8424 pharmacy students as of June 1937. This is an increase of 240 over the census of students taken in 1936, when the enrollment was only 8184 thus reflecting a 3% increase in pharmacy college enrollment.

The American Association of Colleges of Pharmacy announced a six per cent decrease in freshman enrollment in its member institutions for the school year 1936-1937, and the figures compiled by the N. A. B. P. on all the schools show a like decrease, perhaps even a little higher, on freshman enrollment. Some

schools did not furnish detailed figures classified by years so actual count cannot be given.

How can the total enrollment increase when the freshmen count decreases? This is a seeming contradiction. The answer lies in the number of transfer students accepted in the sophomore and later years. In a state university, for example, it is not unusual for a student to take liberal arts, chemistry, engineering or other branches and then get interested in pharmacy and transfer during the second or even subsequent years. He is given the "advance standing" his credits rate and is therefore not included in the freshman count, although he is a new student in pharmacy.

To give a concrete example: One state university showed a freshman enrollment in 1933 of only 15. In 1937, however, the senior enrollment was 49, in spite of the fact that only 9 of the original freshman class were promoted to the sophomore year. The difference represents the transfer students. This example is used to show that the freshman enrollment is not always a reliable index as to the number that will be graduated four years later, even after allowance for drop-outs is given consideration.

The growing demand for pharmacists in the United States, sometimes termed a "shortage," should be no cause for alarm on the basis of statistics in an article in the *Pharmaceutical Journal of Great Britain*, Sept. 11, 1937, page 289. Quoting from that article:

"In the event of the number of entrants to pharmacy showing in future years no increase above the present low rate, it seems that the necessity for legislation aimed at the limitation of pharmacies will not arise. As the supply of managers and qualified assistants diminishes,

so their basic salaries are bound to get higher, and in consequence their natural urge to open in business on their own account will lessen."

In Great Britain, there is only one pharmacy for every 2900 persons, whereas in the United States there is one pharmacy for every 2200 persons. In Great Britain there is more than one physician to every thousand of population and only one pharmacist to every 2130 persons. In the United States (using population estimate of 125,000,000 and estimates of 100,000 pharmacists and 165,000 physicians) there is one doctor to every 760 persons and one pharmacist to every 1250 persons. Or, in Great Britain, the ratio is 2 to 1; in the U. S., 1.65 to 1, the first figure representing the physician, the second the pharmacist.

British medical journals have cited that there is a real risk of an overstocked medical profession. The *British Pharmaceutical Journal* article continues, "The same remark, we believe, applies to pharmacy. In our problem, however, pharmaceutical overpopulation is probably more applicable to certain areas than to the country as a whole."

This comparison is interesting as the British system of training, education and registration of pharmacists has often been cited as a good example to follow. On that basis, the United States would need only 83,000 pharmacists to serve 165,000 physicians. The different conditions existing in the United States, however, particularly geographical, may require a greater number of pharmacists. There is no measuring stick.

According to figures given by the Bureau of Census in the Fifteenth Census of Population, Volume V, Occupations, there were 104,727 "Druggists and Pharmacists" in the United States in 1930. In 1920, a comparative figure of 80,157 is given; in 1910, the figure is only 67,575. The N. A. B. P. count of 100,000 for 1935 is an estimate based on questionnaire returns from the boards of pharmacy. There is no doubt that there was a shrinkage of 5000 during these five intervening depression years. The government census figures show a considerable increase in the number of pharmacists from 1910 to 1930 (about 37,000) so there is some basis for believing that perhaps the saturation point has been reached. It may be wise to remain strictly on a replacement basis until such time when further expansion warrants an increase in the number of pharmacists. Undoubtedly the old law of supply and demand will accomplish that.

## NEW AND NONOFFICIAL REMEDIES.

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.—PAUL NICHOLAS LEECH, *Secretary*.

**PROPADRINE HYDROCHLORIDE.**—*dl*-Phenyl-1-amino-2-propanol-1-hydrochloride. — $\alpha$ -hydroxy- $\beta$ -amino-propylbenzene hydrochloride.— $C_6H_5$ .  $CHOH$ .  $CHNH_2$ .  $CH_3$ .  $HCl$ . Propadrine hydrochloride is the monohydrochloride of a base resembling ephedrine (*laevo*- $\alpha$ -hydroxy- $\beta$ -methyl-amino-propylbenzene) but differs in that the methyl group on the amino group is replaced by a hydrogen atom.

*Actions and Uses.*—Propadrine hydrochloride acts similarly to ephedrine. When applied locally, in the form of a 1 per cent aqueous solution or 0.66 per cent jelly, it produces constriction of the capillaries, thereby shrinking the swollen mucous membranes. It is said that its action is somewhat more prolonged than that of ephedrine. It is also claimed that the anxiety complex is not so apt to ensue with propadrine hydrochloride as with ephedrine.

*Dosage.*—As a spray or instillation, 1 per cent aqueous solution or application of 0.66 per cent jelly locally; orally, as three-eighths grain capsule every two to four hours as indicated. Although no toxic effects have been noted, continued overdosage should be avoided as with other vasoconstrictors.

Propadrine hydrochloride occurs as a white, crystalline powder, possessing an odor resembling that of benzoic acid. It is freely soluble in water and alcohol; insoluble in ether, chloroform and benzene. Its aqueous solution is neutral to litmus. Propadrine hydrochloride melts at 190°-194° C.

Dissolve about 0.5 Gm. of propadrine hydrochloride in 25 cc. of water and add 5 cc. of a saturated solution of sodium carbonate. Cool in an ice bath and collect the resultant needle-shaped crystals on a filter paper, wash and dry at 80° C.; the melting point of the  $\alpha$ -hydroxy- $\beta$ -amino-propylbenzene is 101°-101.5° C.

Dissolve 0.05 Gm. of propadrine hydrochloride in 100 cc. of water; separate portions of 2 cc. yield a yellow color with 5 drops of a 9 per cent ferric chloride solution (*distinction from cobefrin, kephrine, epinephrine*); no precipitate with potassium mercuric iodide solution (Mayer's reagent) (*distinction from benzedrine*). To about 0.1 Gm. of propadrine hydrochloride in 5 cc. of water, add 1 cc. of diluted hydrochloric acid and 1 cc. of barium chloride solution; no turbidity develops (*sulfate*).

Dry about 0.3 Gm. of propadrine hydrochloride, accurately weighed, to constant weight at 100° C.; the loss in weight does not exceed 1 per cent. Incinerate about 0.3 Gm. of propadrine hydrochloride, accurately weighed; the residue does not exceed 0.3 per cent. Transfer about 0.2 Gm. of propadrine hydrochloride, accurately weighed, to a 500-cc. kjeldahl flask and determine the nitrogen content according to the method described in *Methods of Analysis of the Association of Official Agricultural Chemists*, fourth edition, page 23, art. 19: the amount of nitrogen is not less than 7.34 per cent, nor more than 7.52 per cent when calculated to the dried substance. Transfer about 0.2 Gm. of propadrine hydrochloride, accurately weighed, to a 400-

cc. beaker and determine the chloride content according to the method as described in Methods of Analysis, fourth edition, page 131, art. 35: the amount of chloride found corresponds to not less than 18.85 per cent, nor more than 19.95 per cent when calculated to the dried substance.

**Propadrin Hydrochloride—Sharp & Dohme.**—A brand of propadrine hydrochloride-N. N. R.

Manufactured by Sharp & Dohme, Inc., Philadelphia and Baltimore. U. S. patent 1,989,093 (Jan. 29, 1935; expires 1952). Propadrine is a U. S. registered trademark, but the firm disclaims any proprietary rights to the name.

*Propadrin Hydrochloride Capsules, 3/8 grain (0.024 Gm.).*

*Propadrin Hydrochloride Nasal Jelly, 0.66%:* Marketed in one-half ounce nasal tip collapsible tubes containing 0.66 per cent propadrine hydrochloride, with sodium chloride, menthol, thymol and oil of lavender in a water-soluble base; chlorbutanol 0.5 per cent is added as preservative.

*Propadrin Hydrochloride Solution, 1%:* An aqueous solution containing 1 per cent propadrine hydrochloride and 0.5 per cent chlorbutanol as preservative.

## PERSONAL AND NEWS ITEMS.

Dr. E. G. Eberle, Editor of the *JOURNAL*, has been unwell recently, and has been at the Emergency Hospital in Washington for observation and treatment. He is making good progress and expects to leave the hospital at an early date.

Charles H. Schaefer was elected and installed regent of the Pittsburgh Graduate Chapter of Kappa Psi Pharmaceutical fraternity at the meeting on Thursday, October 21st. Other officers are John M. Wyble, *Vice-Regent*; W. F. Heidenreich, *Treasurer*; R. H. Mierzwa, *Secretary*; F. J. Steele, *Historian*; and John A. Berger, *Chaplain*.

Prof. Dr. R. Wasicky writes: "I beg you to announce to the AMERICAN PHARMACEUTICAL ASSOCIATION my heartiest thanks for the great honor in electing me an Honorary Member of the ASSOCIATION. The acknowledgment of my modest works by your ASSOCIATION, esteemed in the whole world, makes me feel very proud of this great distinction." Dr. Wasicky was elected to honorary membership at the New York meeting.

Upon the recommendation of the Kentucky Pharmaceutical Association, Governor Chandler of that state has appointed Mr. Clarence B. Davis, Louisville, as a member of the State Board of Health and Mr. M. Alvin Vaughn, Bowling Green, as a member of the State Board of Pharmacy. It is encouraging to note the increasing number of pharmacists being appointed to the State Health Boards.

## OBITUARY.

CHARLES HERBERT PACKARD.

C. Herbert Packard was born in Amherst, Mass., in 1863, and died in Boston on October 3, 1937. He was educated in the public schools of Boston and, later at Arms Academy, Shelburne Falls, Mass. In 1885 he purchased the drug store in which he had been employed for five preceding years, at 46 Maverick Square, East Boston; in 1900 Mr. Packard acquired another store at 7 Central Square, and conducted both of these establishments until a few years ago when the latter store was sold.

Mr. Packard graduated from the Massachusetts College of Pharmacy in 1892; was elected a trustee of the College in 1904; served as its president from 1909 until 1922 when he declined reelection; and was awarded the honorary degree of Doctor of Pharmacy in 1930. He was an interested member of the Alumni Association and took an active part in the successful efforts to provide a splendid building and endowment fund for the College.

Association activities were given their full share of Mr. Packard's time and attention. He joined the Massachusetts Pharmaceutical Association in 1886, served as committeeman and as delegate to national conventions, as a trustee of its Permanent Fund, as vice-president, and as president in 1907-1908. Last June the Association awarded him a life membership. He was active in the Boston Retail Druggists Association since 1904 and was a member and treasurer of the Boston Druggists' Association (a dining club) since 1917.

Mr. Packard joined the AMERICAN PHARMACEUTICAL ASSOCIATION in 1906, became a Life Member in 1921, and was local secretary in 1911, third vice-president in 1912, second vice-president in 1914, and president in 1920. When the New England Branch was organized he became the first president and served for three years.

For sixteen years Mr. Packard served the Maverick Congregational Church as treasurer. He belonged to the Masonic and other fraternal orders and served at various times as trustee or director of two banks.

On October 27, 1920, Mr. Packard was married in Winthrop to Miss Elma Anabel Wyrer, who survives him.

R. B. J. STANBURY.

Dr. R. B. J. Stanbury, secretary of the Canadian Pharmaceutical Association, and