

# BIBLIOGRAPHY OF PHARMACEUTICAL RESEARCH

Conducted by H. V. Army, Reporter on the Progress of Pharmacy, Chairman of the Committee on Research.

On these pages, each month, will be found a list of articles on pharmaceutical research that appear in the pharmaceutical and other scientific journals of the world. Whenever possible, the list appearing a certain month will record articles appearing in American journals of the preceding month and articles appearing in foreign journals will be recorded as quickly as possible after the journals reach the Reporter.

All articles appearing in these lists will be presented in abstract form in the bound volumes of the YEAR BOOK, which will be issued as soon after the end of the year represented as editing and printing conditions permit. Those desiring abstracts immediately can obtain same for a fee of one dollar each by communicating with H. V. Army, 115 West 68th St., New York, and arrangements can also be made for securing photographic reproduction of entire articles at moderate prices when such are desired.

## PHARMACOPOEIAL REVISION.

Anon

Supplement to the French Codex

*Pharm. J.* 105 (Sept. 25, 1920), 301

Army, H. V.

U. S. P. monographs for chemicals

*J. AM. PHARM. ASSOC.*, 9 (Oct. 1920), 271

## APPARATUS AND MANIPULATIONS.

Griffith, Ivor, and Nichols, A. B.

Prescription clinic

*J. AM. PHARM. ASSOC.*, 9 (Oct. 1920), 979

Grossfeld

Removing scale from aluminum vessels

*Chem. Ztg.*, through *Drug. Circ.*, 64 (Oct. 1920), 382

Klees, P.

A new type of funnel

*Südd. Apoth.-Ztg.*, through *D.-A. Apoth. Ztg.*, 41 (Sept. 1920), 86

## PHARMACEUTICAL PREPARATIONS.

Anon

Duret's balsam

*Svensk Farm. Tid.*, through *Schweiz. Apoth. Ztg.*, 58 (Sept. 23, 1920), 493.

Éwe, G. E.

Secret and non-secret remedies

*J. AM. PHARM. ASSOC.*, 9 (Oct. 1920), 983

Kluge

Caution in using betanaphthol ointments

*Z. med. Beamt.*, through *Pharm. Zent.*, 65 (Aug. 11, 1920), 601

Leimdorfer, J.

Frothing of soap

*Seifensied. J.*, through *Pharm. Zent.*, 61 (July, 22, 1920), 409

## GENERAL BOTANY AND BACTERIOLOGY.

Anon

Drug names

*Schweiz. Apoth. Ztg.*, through *Pharm. Era*, 53 (Oct. 1920), 305

Klein, K.

A new media for diphtheria bacilli

*Dtsch. Med. Wsch.*, through *Pharm. Weekbl.*, 57 (Sept. 11, 1920), 1112

Kremers, E.

Practical cultivation of drug plants

*J. Ind. Eng. Chem.*, 12 (Oct. 1920), 1018

Maquenne, L., and DeMoussy, E.

Toxicity of iron to plants

*Compt. rend.*, through *J. Soc. Chem. Ind.*, 39 (Sept. 15, 1920), 606A

Russell, E. J.

Electric treatment of seed

*Pharm. J.*, 105 (Sept. 18, 1920), 292

Sabalitschka, T.

Drug plant culture in Germany

*Heil. Gewurzpflanzen*, through *Pharm. Zent.*, 61 (July 22, 1920), 413

Solreder

Silica in leguminous seed coats

*Arch. Pharm.*, through *Pharm. J.*, 105 (Sept. 18, 1920), 287

Verschaffelt, E.

Action of poisonous gases on plants

*Pharm. Weekbl.*, 57 (Sept. 25, 1920), 1163

Von Kirchner, O.

Fungoid diseases of medicinal plants

*Heil. Gewurzpflanzen*, through *Pharm. Zent.*, 61 (July 22, 1920), 412

## THERAPEUTICS AND NEW REMEDIES.

Elford, W. P.

Treatment of ringworm

*Brit. Med. J.*, through *Chem. & Drug.*, 93  
(Sept. 11, 1920), 1283

Koenig

Eukodal as habit-forming drug

*Berl. klin. Wschr.*, through *Pharm. Zent.*, 61  
(July 29, 1920), 429

Lopez

Powder for hyperhidrosis

*Sem. Med.*, through *Am. J. Pharm.*, 92 (Sept.  
1920), 682

Lovett

Sun treatment

*J. Am. Med. Assoc.*, 64 (Oct. 1920), 381

Pictet, A., and Gaston, A.

Glucosan

*Compt. rend.*, through *J. Soc. Chem. Ind.*, 39  
(Sept. 15, 1920), 607A

Sayre, L. E., and Patty, F. A.

Disinfectant for soda glasses

*Kansas Bd. Health Bull.*, through *Pharm. Era*,  
53 (Oct. 1920), 305

Schlichtegroll

Nirvanol poisoning

*Berl. Klin.*, through *Pharm. Zent.*, 65 (Aug.  
11, 1920), 602

Tuchler

Cresol in veterinary practice

*Berl. Thierärztl. Wschr.*, through *Pharm. Zent.*,  
61 (July 22, 1920), 413

Unna, P. G.

Increasing skin absorption of medicaments

*Berl. klin. Wschr.*, through *Pharm. Zent.*, 61  
(July 22, 1920), 414

Von Schütz, E.

Claudine as a styptic

*Therap. Gegenw.*, through *Pharm. Zent.*, 61  
(Aug. 5, 1920), 444

Werner, S.

Trypaflavine in dermatology

*Münch. Med. Wschr.*, through *Pharm. Zent.*, 65  
(Aug. 11, 1920), 602VEGETABLE AND ANIMAL MATERIA  
MEDICA.

Anon

Aromatic drugs of Madagascar

*Schweiz. Apoth. Ztg.*, 58 (Sept. 30, 1920), 501

Anon

Artemisia species as sources of camphor sub-  
stitutes*Perf. Ess. Oil J.*, through *Pharm. Weekbl.*, 57  
(Sept. 11, 1920), 1112

Anneler

Opium assays

*Arch. Pharm.*, through *Pharm. J.*, 105 (Sept.  
18, 1920), 287

Caesar, H.

Tomentilla in dysentery

*Puk*, through *Pharm. Zent.*, 61 (July 29, 1920),  
428

Casparis, P.

Folk medicine of Turkestan

*Schweiz. Apoth. Ztg.*, 58 (Sept. 30, 1920), 497

Clark, A. W., Smith, R. O., and Forman, I.

Purity standards for absorbent cotton

*J. AM. PHARM. ASSOC.*, 9 (Oct. 1920), 958

DeWaal, M.

Insecticidal power of Helenium autumnale

*Pharm. Weekbl.*, 57 (Sept. 11, 1920), 1100

Doyon, M.

Factors influencing coagulation of milk

*J. pharm. chim.*, 22 (Sept. 1, 1920), 200

Farcy, L.

Candelilla wax

*Ann. falsif.*, through *J. pharm. chim.*, 22  
(Sept. 1, 1920), 174

Gerstenberger, H. J., and Champion, W. M.

Constipating action of orange juice

*Am. J. Diseases Children*, through *Pharm.*  
*Weekbl.*, 57 (Sept. 25, 1920), 1178

Greenish, H. G.

Collection of squill

*Pharm. J.*, 105 (Sept. 18, 1920), 284

Greenish, H. G.

Production of acacia

*Pharm. J.*, 105 (Sept. 11, 1920), 265

Grimme

Mulatinhos, a Brazilian bean

*Pharm. Zent.*, 61 (July 29, 1920), 421

Gunsaulis, E. N.

Sugar from the nipa palm

*Comm. Repts.*, through *Drug. Circ.*, 64 (Oct.  
1920), 381

Hess

Tomato as anti-scorbutic

*N. Y. J. Med.*, through *Chem. & Drug.*, 93  
(Sept. 11, 1920), 1269

Kilmer, F. B., and Smith, R. O.

Practical belladonna culture

*Am. J. Pharm.*, 92 (Sept. 1920), 620

Krucche, A.

Hop branches as surgical dressings

*Pharm. Ztg.*, through *Pharm. Zent.*, 61 (July  
22, 1920), 409

Leake, H. M., and Pershad, B. R.

Empire opium

*J. Genetics*, through *Pharm. J.*, 105 (Sept. 18,  
1920), 292

Leclerc  
 Passiflora in influenza  
*J. pharm. chim.*, 22 (Aug. 16, 1920), 158  
 Sabalitschke, T.  
 Collection of chamomile  
*Filz. Kräuterfreund*, through *Pharm. Weekbl.*,  
 57 (Sept. 4, 1920), 1080  
 Trabut  
 Eucalyptus in diabetes  
*Bull. Gen. Therap.*, through *Pharm. J.*, 105  
 (Sept. 18, 1920), 287  
 Tschirch, A.  
 Natural and artificial resins  
*Schweiz. Apoth. Ztg.*, 58 (Sept. 23, 1920), 485  
 and (Sept. 30, 1920), 503  
 Vamossy  
 Identification of palthe senna  
*Pharm. Monatsh.*, through *Drug. Circ.*, 64  
 (Oct. 1920) 382  
 Van der Wielen, P.  
 Uses of chenopodium  
*Onze Juinen*, through *Chem. & Drug.*, 93  
 (Sept. 25, 1920), 1334

#### GENERAL AND PHYSICAL CHEMISTRY.

Collins, H.  
 Constitution and structure of the elements  
*Chem. News*, 121 (Oct. 1, 1920), 157  
 Escaich, A.  
 Some chemical tests  
*J. pharm. chim.*, 22 (Aug. 16, 1920), 138  
 Sasse, O.  
 Some volumetric assays  
*Pharm. Zent.*, 65 (July 28, 1920), 559

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Anon  
 Zirconium oxide in radiography  
*Chem. & Drug.*, 93 (Sept. 11, 1920), 1270  
 Barry, P.  
 Colloidal sulphur  
*Compt. rend.*, through *Chem. News*, 121 (Sept.  
 21, 1920), 142  
 Coupin  
 Detection of cobalt in nickel  
*Bull. Sci. Pharmacol.*, through *Drug. Circ.*, 64  
 (Oct. 1920), 382  
 Denigès, G.  
 Iodic acid as micro-reagent for calcium, stron-  
 tium and barium  
*Compt. rend.*, through *J. pharm. chim.*, 22  
 (Sept. 1, 1920), 197  
 Druce, J. G. F.  
 Volumetric assay of tin  
*Chem. News*, 121 (Oct. 8, 1920), 173

Giaya, S.  
 Zinc in the human organism  
*Compt. rend.*, through *J. pharm. chim.*, 22  
 (Sept. 1, 1920), 195  
 Gutbier, A., and Weisc, G. L.  
 Assay of tungstic acid  
*Z. anal. Chem.*, through *Pharm. Zent.*, 61 (Aug.  
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 Koltzoff, I. M.  
 Separation of barium, strontium and calcium  
 by the chromate method  
*Pharm. Weekbl.*, 57 (Sept. 4, 1920), 1080  
 Loeffl, K.  
 Calcium biphosphate  
*Pharm. Ztg.*, 65 (Aug. 14, 1920), 607  
 Michaelis, L. and Rona, P.  
 Adsorptive power of animal charcoal  
*Biochem. Z.*, through *Pharm. Zent.*, 61 (Aug.  
 12, 1920), 456  
 Moore, H.  
 Nitrogen peroxide in the atmosphere  
*Southern Pharm. J.*, 13 (Oct. 1920), 74  
 Petersen  
 Separation of antimony, arsenic and tin  
*Z. anorg. Chem.*, through *Drug. Circ.*, 64 (Oct.  
 1920), 381  
 Prescher, J.  
 Calcium carbonate assay  
*Pharm. Zent.*, 61 (Aug. 12, 1920), 453  
 Thiel, A.  
 Allotropism of lead  
*Ber.*, through *Pharm. Zent.*, 61 (July 29, 1920),  
 425

#### ORGANIC CHEMICALS.

Anon  
 Poisoning by aspirin  
*Brit. Med. J.*, through *Pharm. J.*, 105 (Sept.  
 4, 1920), 256  
 Anon  
 Tea seed oil  
*Chem. Umschau*, through *Pharm. Zent.*, 61  
 (July 22, 1920), 412  
 Anon  
 Toxic effect of arspheutamine  
*Can. Med. Assoc. J.*, through *Am. J. Pharm.*,  
 92 (Sept. 1920), 680  
 Anon  
 Trichlorethylene as fat solvent  
*Chem. Umschau*, through *Pharm. Zent.*, 61  
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 Arnoldi, W.  
 Therapeutics of atropine  
*Berl. klin. Wschr.*, through *Pharm. Zent.*, 61  
 (July 29, 1920), 429

- Audrain  
Ether injections in whooping-cough  
*Med. Press*, through *Pharm. J.*, 105 (Sept. 4, 1920), 250
- Borisch  
Therapeutics of synthetic camphor  
*Pharm. Zent.*, 61 (July 22, 1920), 404
- Bougault, J., and Perrier, J.  
Action of hydrocyanic acid on glucose  
*J. pharm. chim.*, 22 (Aug. 16, 1920), 129
- Busquet, H., and Vischniac, C.  
Fate of olive oil injected into blood stream  
*J. pharm. chim.*, 22 (Sept. 1, 1920), 201
- Capelli, G.  
Physical properties of acetylsalicylic acid  
*Chem. & Drug.*, 93 (Sept. 11, 1920), 1274
- Carlinfanti and Scelba  
Assay of small amounts of alkaloïds  
*Chem. Zent.*, through *Pharm. Zent.*, 61 (July 29, 1920), 423
- Chenisse, L.  
External use of pepsin  
*Presse. Med.*, through *Chem. & Drug.*, 93 (Sept. 11, 1920), 1283
- Clapp, C. A., and Martin, M. G.  
Mercurochrome in ophthalmia neonatorum  
*J. Am. Med. Assoc.*, through *Am. J. Pharm.*, 92 (Sept. 1920), 682
- Dimroth, O., and Kaemmerer, H.  
Structure of carminic acid  
*Ber.*, through *Pharm. Zent.*, 61 (Aug. 5, 1920), 439
- Dunstan  
Vanillin from oil of pimento leaves  
*Chem. & Drug.*, 93 (Sept. 4, 1920), 1253
- Fleury, P.  
Iodometric assay of aromatic arsenous compounds  
*Bull. Soc. Chim.*, through *J. Soc. Chem. Ind.*, 39 (Sept. 30, 1920), 638A
- Fleury, E.  
Morocco argan oil  
*J. pharm. chim.*, 22 (Sept. 1920), 165
- Fuchs, W., and Elsner, B.  
Tautomerism of resorcin  
*Ber.*, through *Pharm. Zent.*, 61 (Aug. 5, 1920), 439
- Gascard, A.  
Brodie's myricyl alcohol  
*Compt. rend.*, through *J. pharm. chim.*, 22 (Sept. 1, 1920), 194
- Gettler, A. O.  
Methyl alcohol tests  
*J. Biol. Chem.*, through *J. Soc. Chem. Ind.*, 39 (Sept. 30, 1920), 613A
- Giribaldi  
Sodium chloride as antidote for strychnine  
*Gas. Ospedale Clin.*, through *Am. J. Pharm.*, 92 (Sept. 1920), 680
- Gomberg, M., and Buchler, C. C.  
Preparation of benzyl esters from benzyl chloride  
*J. Am. Chem. Soc.*, 42 (Oct. 1920), 2059
- Graham  
Sodium chloride as antidote for chloroform  
*Arch. Int. Med.*, through *Pharm. Era*, 53 (Oct. 1920), 305
- Greger, J.  
Refractive index of rosin  
*Chem. Umschau*, through *Pharm. Zent.*, 61 (Aug. 5, 1920), 439
- Hackl, I. W. D.  
Structural relations of volatile oils  
*J. AM. PHARM. ASSOC.*, 9 (Oct. 1920), 948
- Hanzlik, P. J.  
Degree of alkalinity in the formaldehyde-phloroglucin test  
*J. Biol. Chem.*, through *J. Soc. Chem. Ind.*, 39 (Sept. 15, 1920), 610A
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Phenylmethyl carbinol as local anesthetic  
*J. Pharmacol. Exp. Therap.*, through *Am. J. Pharm.*, 92 (Sept. 1920), 683
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Separation of fixed oils from mineral oils  
*Chem. Umschau*, through *Pharm. Zent.*, 61 (July 29, 1920), 425
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Digestibility of raw starches  
*J. Biol. Chem.*, through *Pharm. J.*, 105 (Sept. 11, 1920), 271
- Leslie, E. H., and Carpenter, C. D.  
Conversion of sodium formate into the oxalate  
*Chem. Met. Eng.*, through *J. Soc. Chem. Ind.*, 39 (Sept. 30, 1920), 639A
- Loeffe, K.  
Synthesis of fatty acids from paraffin  
*Chem. Ztg.*, through *J. Soc. Chem. Ind.*, 39 (Sept. 15, 1920), 604A
- Luce, E.  
Composition of fusel oil  
*J. pharm. chim.*, 22 (Aug. 16, 1920), 136
- Macht, D. I.  
Benzyl benzoate in hiccup  
*Med. Rec.*, through *Pharm. J.*, 105 (Sept. 11, 1920), 271
- MacLean, J. S., and Thomas, E. M.  
Nature of yeast fat  
*Biochem. J.*, through *J. Soc. Chem. Ind.*, 39 (Sept. 15, 1920), 604A

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Boro-potassic tartrate in epilepsy  
*Bull. Acad. Med.*, through *J. pharm. chim.*, 22  
(Sept. 1, 1920), 188
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Dichlorethyl sulphide  
*J. pharm. chim.*, 22 (Sept. 1, 1920), 161
- Masfarand, S.  
Practical distillation of alcohol, acetone and ether  
*J. Soc. Chem. Ind.*, 39 (Sept. 15, 1920), 299T
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Walnut oil  
*Arch. Pharm.*, through *Pharm. Zent.*, 61 (July 22, 1920), 412
- Messner, J.  
Hydroquinone  
*Pharm. Zent.*, 61 (Aug. 12, 1920), 454
- Murayama, Y.  
Oil of *Mossia grosseserrata*  
*J. Pharm. Soc. Japan*, through *J. Soc. Chem. Ind.*, 39 (Sept. 30, 1920), 640A
- Nassauer, M.  
Aniline poisoning  
*Z. angew. Chem.*, through *Am. J. Pharm.*, 92  
(Sept. 1920), 679
- Neumann, B., and Schneider, A.  
Conversion of acetylene into acetaldehyde and acetic acid  
*Z. angew. chem.*, through *J. Soc. Chem. Ind.*, 39 (Sept. 30, 1920), 639A
- Nooyan, A. M.  
Urson and its distribution in plants  
*Pharm. Weekbl.*, 57 (Sept. 18, 1920), 1128
- Osborne, T. B., Mendel, L. B., and Wakeman, A. J.  
Water-soluble vitamins in common fruits  
*J. Biol. Chem.*, through *J. Soc. Chem. Ind.*, 39  
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- Patein, G.  
Poisoning with hexamethylenamine  
*Bull. Acad. Med.*, through *J. pharm. chim.*, 22  
(Sept. 1, 1920), 190
- Raiziss, G. W., Kolmer, J. A., and Gavron, J. L.  
Chemotherapy of organic arsenic and mercury compounds  
*J. Biol. Chem.*, through *J. pharm. chim.*, 22  
(Sept. 1, 1920), 184
- Richards, P. A. E.  
Detection and assay of cocaine, heroine and veronal in the cadaver  
*Analyst*, through *Pharm. Zent.*, 61 (July 22, 1920), 406
- Richmond, H. D.  
Nitroglycerin assay  
*Analyst*, through *J. Soc. Chem. Ind.*, 39 (Sept. 30, 1920), 640A
- Roth, G. B.  
Alkalinized arsphenamine solution toxic when exposed to air  
*U. S. Pub. Health Bull.*, through *J. AM. PHARM. ASSOC.*, 9 (Oct. 1920), 1023
- Sandquist and Mohlin  
Decomposition of amyl nitrite  
*Svensk Farm. Tid.*, through *Pharm. Zent.*, 61  
(Aug. 12, 1920), 455
- Sloboziano  
Betanaphthol in itch  
*Gaz. Iloplit.*, through *Pharm. J.*, 105 (Sept. 4, 1920), 250
- Strathy  
Toxic effect of arsphenamine  
*Lancet*, through *Am. J. Pharm.*, 92 (Sept. 1920), 681
- Tanret, G.  
Pelletierine and methyl pelletierine  
*Bull. Soc. Chim.*, through *J. Soc. Chem. Ind.*, 39 (Sept. 30, 1920), 638A
- Tschirch, A.  
What are vitamins?  
*Schweiz. Med. Wschr.*, through *Pharm. Zent.*, 61 (July 29, 1920), 416
- Von Euler, H., and Svanberg, O.  
Preparation of active invertase  
*Z. physiol. Chem.*, through *J. Soc. Chem. Ind.*, 39 (Sept. 30, 1920), 636A
- Williams, R. J.  
Vitamine assay  
*J. Biol. Chem.*, through *J. Soc. Chem. Ind.*, 39  
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## CLINIC DIAGNOSTIC METHODS.

- Anon  
Clinical sugar assays  
*Schweiz. Apoth. Ztg.*, 58 (Sept. 23, 1920), 490
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Assay of mercury in urine  
*Munch. Med. Wschr.*, through *Pharm. Weekbl.*, 57 (Sept. 11, 1920), 1113
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Urea assay  
*Ann. chim. anal.*, through *Pharm. J.*, 105  
(Sept. 4, 1920), 250
- Gerhardt, O.  
Diagnostic significance of sarcina in stomach contents  
*Munch. Med. Wschr.*, through *Pharm. Zent.*, 61  
(Aug. 12, 1920), 456
- Jolles, A.  
Detection of indican in urine, etc.  
*Med. Klin.*, through *Pharm. Zent.*, 61 (July 22, 1920), 408

Pégurier, G.

Assay of albumin in urine

*Rep. Pharm.*, through *Pharm. J.*, 105 (Sept. 4, 1920), 250

## MISCELLANEOUS.

Anon

Hand cleaner

*Cal. Ret. Drug. J.*, through *Pharm. Era*, 53 (Oct. 1920), 306

Anon

Lavatory deodorant

*Nat. Drug.*, through *Pharm. Era*, 53 (Oct. 1920), 306

Anon

Luminous paints

*Drogenhandler*, through *Pharm. Zeit.*, 5 (Aug. 5, 1920), 445

Jones, H. I., and DuBois, R.

Coating to preserve eggs

*Drug. Circ.*, 64 (Oct. 1920), 384

Marchadier and Goujon

Compressed, granulated and powdered eggs

*Ann. falsif.*, through *J. pharm. chim.*, 22 (Sept. 1, 1920), 192

Tinkler, C. R., and Soar, M. C.

Cause of darkening of hard-boiled egg yolk

*Biochem. J.*, through *Pharm. J.*, 105 (Sept. 4, 1920), 250

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## PROCEEDINGS OF THE LOCAL BRANCHES

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws. Chapter X. Art. III.

Reports of the meetings of the Local Branches should be mailed to the Editor on the day following the meeting, if possible. Minutes should be typewritten with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter. To maintain its activity and representation each Branch should see that at least three of its meetings during the year are reported in the Journal.

### CHICAGO.

The 112th monthly meeting of the Chicago Branch, A. Ph. A., was held Friday evening, October 29, at the College of Pharmacy building with a lecture by Dr. Edward Kremers, entitled "The Evolution of the Apothecary and His Shop."

He was warmly welcomed by an audience filling the large lecture room. After the meeting was opened, Dr. Kremers was given the platform and presented his subject as only such an authority on pharmaceutical history could do. The many lantern illustrations from the "apothecia" of Egypt and Greece, 1500 B.C., to the most modern drug stores, added greatly to the appreciation of the lecture.

Preceding the lecture, the officers of the Branch gave a dinner to Dr. and Mrs. Kremers at the Hotel LaSalle.

A synopsis of the lecture follows:

#### THE EVOLUTION OF THE APOTHECARY AND HIS SHOP.

(Synopsis and Illustrations.)

Derivation of the word "apotheke," *i. e.*, a place for storage. Thus the modern

German word for library, *viz.*, "bibliothek" is a storage place for books. One of the art galleries in Munich, the "Pinkothek," is a storage place for paintings.

The word pharmacist is derived from another Greek word meaning a medicament.

The precursors of the modern apothecary and his shop:

1. In Egypt (priests and later charlatans).
2. In Greece (root cutters, ointment makers, ointment sellers, etc.).
3. In Rome (medicine peddlers, herbalists, the street of the ointment makers).
4. Among the Arabians (hospital pharmacies. First public pharmacy in Bagdad in 8th century).
5. Among Christians (Monastic dispensaries).

The modern apothecary or pharmacist.

The first public apothecary shop in Naples in the 11th century.

Separation of pharmacy from medicine.

Establishment of apothecary shops in Germany since the 12th century.

1. Hospital dispensaries.
2. Court apothecaries.