PHARMACEUTICAL ABSTRACTS

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ABSTRACTORS

CONTENTS

PHARMACY

Pharmacopœias and Formularies

British Pharmaceutical Codex 1934. An extensive review of the new Brit. Phar. Codex with detailed discussions of included material which has been developed in recent years. A list of specialties stating the composition, therapeutic usage, manufacturer and agent is given in the new Codex.—Marg. Van Hauwaert. *J. pharm. Belg.*, 17 (1935), 37, 61, 83, 98, 115, 169, 185, 203, 241, 261, 293, 307, 325. (S. W. G.)

Homeopathic Dispensatory—New. Methods of Preparation and Assay of. The methods of preparing essences, tinctures, solutions, and powder dilutions of plants, animal products or minerals according to the homeopathic regulations are explained. The essences are prepared from the fresh plants. Plants free from camphor-like oils or resins are pressed until 60% of their sap is obtained, an equal volume of alcohol (90%) is added, and after standing for a period of time filtered. Plants yielding over 70% of sap are macerated for 14 days in alcohol (90%) equivalent in volume to sap content, then pressed and filtered. Plants containing ethereal oil, resins or camphors, and yielding less than 60% of sap are first tested for sap content, then sufficient alcohol is used to prepare the essence, usually a 1:3 dilution. The preparation of tinctures depends upon the nature of the drug. Fifty various types of tinctures are prepared from fresh animal material, the strength being 0.01 or 0.1. Acids are diluted ten times (D 1). Powder dilutions are prepared by repeated triturating and sieving of the materials. The diluents used are either aqueous or alcoholic media or milk sugar. The power of dilutions is indicated in tenths (D) or hundredths (C). The specific gravity and capillary analysis on filter paper or combined with luminescence analysis are also determined.—Konrad Schulze. *Pharm. Zentralh.*, 76 (1935), 114. (E. V. S.)

Non-Official Formulæ

Antacid Preparations. Many of these preparations on the market are mixtures of soluble and insoluble alkaline salts with digestives such as pepsin, pancrease, diastase and flavored with peppermint, cinnamon, anise and menthol. The following are formulas of this type: (1) Precipitated calcium phosphate 9%, precipitated calcium carbonate 10%, magnesium oxide 20%, sodium bicarbonate 30%, bismuth subnitrate 20%, powdered sugar 20%, oil of peppermint 1%. Rub up the oil with the chalk and mix the rest of the ingredients with it thoroughly. (2) Magnesium oxide 25%, sodium carbonate 25%, sodium bicarbonate 25%, lactose 20%, pepsin 5%. (3) Bismuth subnitrate 15%, magnesium carbonate 20%, magnesium oxide 20%, sodium bicarbonate 19%, borax 3%, milk sugar 20%, pepsin 3%. (4) Sodium bicarbonate 20%, powdered ginger marc 3%, powdered rhubarb 5%, magnesium oxide 25%, magnesium carbonate 20%, bismuth subnitrate 20%, pepsin 2%, powdered sugar 10%. (5) Magnesium hydroxide 15%, magnesium oxide 15%, magnesium carbonate 15%, bismuth subnitrate 20%, sodium bicarbonate 13%, powdered sugar 20%, peppermint 2%.—Anon. *Drug and Cosmetic Ind.*, 36 (1935), 550, 621. (H. M. B.)

Cosmetic Formula. Ingredients and method of manufacturing a hair oil formula of lanolin and mineral oil are cited.—Anon. *Arch. Pharm. og Chemi*, 42 (1935), 186. (C. S. L.)

Hair Lotion. The following composition is given: Alcohol 420, camphor 15, ammonia 22, oil of turpentine 40 and decoction of camomile 415 Gm.—Henri Fagny. Fr. Pat., 776,966 (Feb. 8, 1935). (S. W. G.)

Hair Tonics. These preparations are divided into three classes: (1) those designed to prevent baldness, including those intended to "cure" baldness, (2) astringent, intended to restrict excessive oiliness and scalp perspiration and (3) those designed to stimulate the scalp and dress the hair. No tonic is known which will prevent or cure baldness but in some cases can help to restore hair which is lost because of disease by killing bacteria on the scalp and by stimulating the circulation of the blood through the area. Stimulating tonics are also of value when baldness is caused by wearing excessively tight hats or by improper care of the scalp. Essentially most hair tonics consist of (*a*) solvents such as water, alcohol, glycerin, kerosene, chloroform, (*b*) counter-irritants as cantharides, formic acid, capsicum, diethylphthalate, (*c*) conditioners as castor oil, sulphonated castor oil, (*d*) dandruff removers as quinine arsenite, potassium arsenite, potassium sulphate, (*e*) antiseptics as Fowler's solution, Carrel-Dakin solution, formaldehyde, benzoic acid and its esters, phenol, resorcin, resorcin monoacetate etc., (*f*) foaming agents as saponin, powdered soap, tincture quillaja, (*g*) detergents as sodium lauryl sulphonate, sodium cetyl sulphonate, soap,

sulphonated oils. The following formulas are offered: (1) Castor oil, odorless 18%; chloral hydrate 2%; alcohol 79.5%; perfume 0.5%. Dissolve the chloral hydrate in the oil, add the perfume and alcohol, filter. This is useful for dry hair and scalp and to impart a lustre to the hair. (2) Potassium arsenite 0.2%; deodorized kerosene 74%; alcohol 20%; perfume 0.8%; ethylene glycol 5%. Dissolve the salt and perfume in the alcohol, add ethylene glycol and kerosene and mix. This product is excellent for dandruff and should be dispensed with a "shake" label. (3) Fowler's solution 25%; alcohol 30%; glycerin 5%; saponin 0.5%; water 39%; perfume 0.5%. Dissolve the saponin in a small amount of water, add glycerin and alcohol, mix, add water and Fowler's solution. This tonic is recommended as an antiseptic for treatment of dry scalp and dandruff and is a good dressing. (4) Chlorothymol 0.1%; tincture of capsicum 4%; quinine arsenite 0.2%; alcohol 75%; castor oil 20%; perfume 0.7%. Dissolve the chlorothymol and quinine salt in alcohol, add perfume, tincture and oil. This tonic is an excellent antiseptic for dandruff and a good dressing. (5) Tannic acid 4%; formaldehyde 0.2%; alcohol 60%; water 35%; perfume 0.8%. Dissolve the acid in alcohol, add the other ingredients, mix and filter. This is a good antiseptic astringent tonic for oily scalp and dandruff. (6) Quinine arsenite 0.2%; tincture cinchona 10%; tincture quillaja 4%; quinine 0.5%; alcohol 60%; perfume 0.3%; water 25%. Dissolve the quinine and its salt in alcohol, add the remainder of the ingredients, mix, filter.—ANON. *Drug and Cosmetic Ind.*, 36 (1935), 553–554. (H. M. B.)

Mouth-Wash Powders. The powders contain a stabilized oxygen-yielding compound mixed with a silver-containing compound and preferably also an acid substance. The various substances which may be used are given. The following example is given: Dehydrated sodium perborate 30, silver salt of *p*-hydroxybenzoic acid 1.6 and tartaric acid 11.25 Gm.—DEUTSCHE GOLD- UND SILBER-SCHEIDEANSTALT VORM. ROESSLER. Brit. Pat., 421,692 (Dec. 28, 1934). (S. W. G.)

Sage Oil in Perfumery and Cosmetics. Properties and uses are discussed. Because of its disinfecting power the oil may be used in the following types of toilet vinegars: (1) alcohol (90%) 1000 parts, glacial acetic acid 100, acetic ether 20, water 300, lavender oil (terpeneless) 15, bergamot oil (terpeneless) 5, sage oil 3; (2) water 7000 parts, alcohol 3500, bergamot oil 30, citronella oil (terpeneless) 3, oil of orange 10, sage oil 25, lavender oil 5, oil of neroli 5, 50% sage infusion 500. Allow to stand for 24 hours, add tincture of benzoin 60, and tincture of tolu 60. Shake and add wine vinegar 2000 parts. After 24 hours filter and add 90 parts of glacial acetic acid. Finely powdered dried leaves of sage are of advantage in tooth powders and pastes; the drug as well as the oil is valuable as a deodorant in baths and in the form of a wine or tea is of value in healing abscesses and internally to counteract fevers and grippe.—A. M. BURGER. *Riechstoff-Ind.*, 10 (1935), 61–63. (H. M. B.)

Solar Shields—Comments on. A discussion on the formation of sunburns and tans. It appears that sunburn preventives should absorb strongly between 2950–3150 Å units to be the most effective. The writer feels that when the label of a good sunburn preventive claims to promote tan it is not misbranding for by preventing burning and dermal injury, pigmentation is acquired faster and is deeper than in skins which have been burned.—L. STAMBOVSKY. *Drug and Cosmetic Ind.*, 36 (1935), 551–552, 554. (H. M. B.)

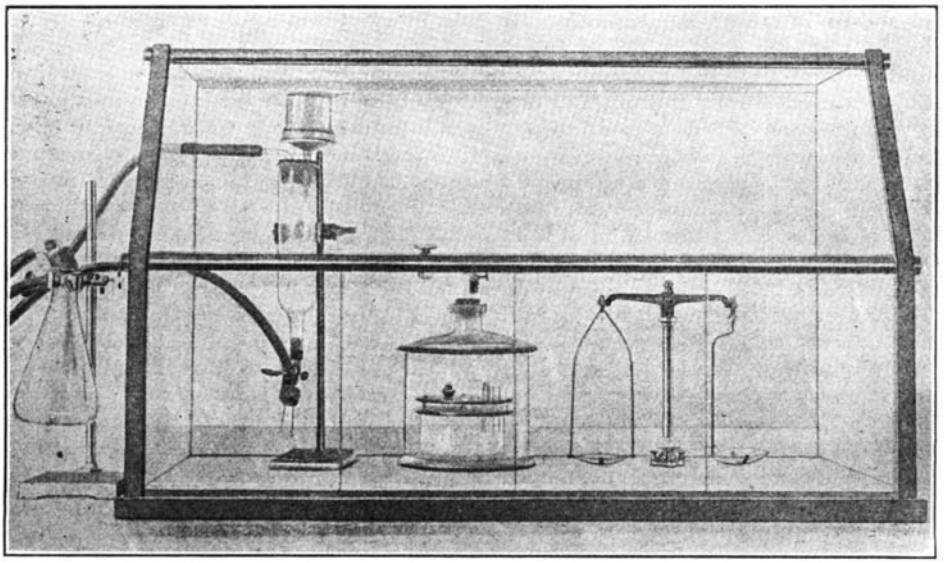
Tooth Preparations—Soaps and Soap Substitutes in. The use of soaps is discussed. The disinfecting power of soaps might be increased by the addition of Nipasol or Nipabenzyl. Saponin from quillaja may be added in small amounts as well as Turkey Red oil and fatty alcohols.—J. AUGUSTIN. *Riechstoff-Ind.*, 10 (1935), 59–60. (H. M. B.)

DISPENSING

Acriflavine Emulsion—Simple Formula for. The emulsion may be prepared by dissolving acriflavine in equal parts of lime water and arachis or olive oil. The formula is: acriflavine, B. P. 1 Gm., lime water, B. P. 500 cc., arachis (or olive) oil, B. P. 500 cc. Dissolve the acriflavine in the lime water, add the oil, and shake thoroughly. The preparation is highly antiseptic and is particularly useful in the treatment of wounds, abrasions, burns of lesser degree and scalds, and in severe burns after preliminary treatment with tannic acid.—J. WALKER TOMB. *Prescriber*, 29 (1935), 207. (S. W. G.)

Dispensing Cabinet—Aseptic. The dispensing cabinet described has the following advantages: It may be swabbed with an antiseptic solution as it is made chiefly of glass, it may be completely closed when not in use; with a little practice it is as easy to work with the case as on

the open bench. The dimensions are: Base 36 in. by 19¼ in., ends 21 in. high, 18½ in. wide, 11 in. high at front and sloping back at 60 degrees. Four glass doors, 10 in. by 9¼ in. in size, slide between grooves in the lower brass rod and in a grooved brass strip on the base-board. The wooden interior is enameled white and the brass rods are chromium plated. The illustration shows the



case assembled with balance, filtration apparatus and apparatus for filling ampuls by suction. The flask on the left is a water trap leading to a filter pump.—C. GUNN. *Pharm. J.*, 134 (1935), 327. (W. B. B.)

Magnesium Oxide—Incompatibility of, with Sodium Bicarbonate. When the above mixture was dispensed the sediment, at first diffusible, in a few minutes was diffusible only with difficulty, and in about two hours, bunches of needle-like crystals were formed on the sides of the bottle. No evolution of carbon dioxide took place. In order to ascertain the nature of the chemical changes that occur, one mole (42 Gm.) of sodium bicarbonate was dissolved in 500 cc. of distilled water, and one mole (20 Gm.) of heavy magnesium oxide was added. A crystalline deposit formed in two days. Eight grams of crystals were obtained. A second batch of crystals was obtained on standing. The crystals were sparingly soluble in water, soluble with effervescence in dilute acids and were found to consist of a hydrated carbonate of magnesium. A magnesium carbonate of similar composition was obtained by using two moles (84 Gm.) of sodium bicarbonate dissolved in 1100 cc. of water and one mole (20 Gm.) of heavy magnesium oxide. It is the formation of this crystalline hydroxy-carbonate of magnesium which causes the sediment in the mixture to become indiffusible.—N. W. WEST. *Australasian J. Pharm.*, 16 (1935), 182. (T. G. W.)

Ointment Jars—Bakelite. Recently, ointment jars made of bakelite have been offered for sale. The authors obtained two makes of bakelite jars and tested them with regard to 16 different ointments. They found that ointments containing pharmaceuticals having phenolic hydroxyl groups as resorcinol naphthol, etc., and ointments containing mercury compounds suffer changes on contact with bakelite. They also found the particular makes of jars to be technically defective.—BÜCHI and SCHENKER. *Schweiz. Apoth.-Ztg.*, 73 (1935), 239. (M. F. W. D.)

Papaverine Hydrochloride—Solubility of, in Presence of Certain Salts. Papaverine hydrochloride was added in different amounts to a series of solutions of sodium bromide of concentrations from 5% to 30%. With 5% solution of the bromide no turbidity was produced, while with higher concentrations a precipitate settled out. The precipitate was found to be papaverine hydrochloride. Similar results were obtained with sodium chloride, potassium bromide, ammonium bromide, calcium bromide and potassium nitrate. Magnesium chloride had no effect on the solubility of papaverine hydrochloride in the concentrations studied.—E. DEFRANCE. *J. pharm. Belg.*, 17 (1935), 393. (S. W. G.)

Solvents for Therapeutic Substances. Mixtures of betaine or its homologs with amides of lower fatty acids, with or without water are useful as solvents of substances slightly soluble in water. Phenylethylbarbituric acid may be dissolved in a mixture of acetamide 65, betaine 5 and water 30% to give a solution containing 10 Gm. in 100 cc. of solution. Other solutions are cited. Other substances may be added to the solvent mixtures. Solutions of albuminous and fatty substances were not prepared.—EGGOCHEMIA FABRIK CHEM. UND PHARMAZEUTISCHER PRÄPARATE PATZAU. Austrian Pat., 140,431, Jan. 25, 1935 (Cl. 30*f*). (S. W. G.)

Sucrose Octa-Acetate-Compulsory Use of, as Rubbing Alcohol Denaturant. Regulations affecting manufacture of rubbing alcohol compounds, issued by Bureau of Internal Revenue, Washington, involve the use of an entirely new denaturing material as from June 1st next, *viz.*, sucrose octa-acetate. The formula for the new specially denatured alcohol is given. Sucrose octa-acetate is an organic acetylation product, being a white non-hygroscopic powder having an intensely bitter taste. It shall have a melting point of not less than 69.0° C. and not more than 72.0° C. Other properties are also given. The formulæ of rubbing alcohols are discussed.—ANON. *Perf. and Ess. Oil Rec.*, 26 (1935), 180. (A. C. DeD.)

Tablets—Mean Deviation of Functions of Correlated Observations and of Uncorrelated Observations, as Applied to. Development of formulæ of correlation is set forth. It is shown how one takes account of the correlation between two variables when determining the mean deviation of a function of the two variables. A sampled group of tablets is then cited as an example as regards the relation of their weight, their content of chemicals and their percentage composition. In the case of a sampling from products made under identical conditions, it is to be expected that their weight and content of chemicals should show an absolute correlation, yet this may not be found in practice, while a correlation will be found between the weight and the percentage composition. This may be explained on the assumption that the moisture content of the tablet mass has altered by evaporation during the preparation of the tablets.—J. P. JACOBSEN. *Dansk Tids. Farm.*, 9 (1935), 53. (C. S. L.)

Zinc Oxide and Olive Oil—Mixtures of. A study is reported of fifteen specimens of zinc oxide-olive oil mixtures, prepared with zinc oxide of various qualities. The finer powdered the oxide used, the more solid the consistency of the olive oil mixture. Many dermatologists add lanolin to these formulas to gain such consistency.—E. KARLING. *Farm. Revy*, 34 (1935), 239. (C. S. L.)

PHARMACEUTICAL HISTORY

Christ as an Apothecary. A discussion of pictures portraying Christ as a member of this profession.—ANON. *Pharm. Post*, 68 (1935), 165–170. (H. M. B.)

Cosmetics—History of, in Recent Times. Historical account covering the 17th and 18th centuries. Many interesting illustrations are offered.—A. HAUENSTEIN. *Riechstoff-Ind.*, 10 (1935), 67–71. (H. M. B.)

PHARMACEUTICAL EDUCATION

Pharmacognosy—The Teaching of Habitats in. In learning habitats the average student associates the name of the drug and a geographical locality, chiefly by "brute memory." The best way to create desirable associations is to use geographical information along with discussion of the drug. This may be done by giving history, collection and commerce with topography of the region where it is found or cultivated. The Bible, the Travels of Marco Polo and other historical or travel books help to create interest. Pictures may be used or photographs; lantern slides along with commercial aspects make excellent combinations. Drug maps are very valuable helps. Maps of continents are better than world maps. The author uses them in laboratory manual, the student writing drug names on his map. Knowledge of habitats is a minor part of pharmacognostical instruction but it offers a link in association between pharmacognosy and other knowledge and teachers should not overlook the value.—ELMER H. WIRTH. *J. Am. Pharm. Assoc.*, 24 (1935), 413. (Z. M. C.)

Urinalysis—Teaching, to Students of Pharmacy. Comments on Paper by Professor Antoine E. Greene. A pharmacist should be able to assist the medical practitioner, so study of urinalysis should be an acceptable elective and if possible a required subject. In an analysis of

urine, as much emphasis should be placed on microscopic findings as chemical, though a bacteriological examination is only necessary occasionally. A correct interpretation of chemical findings requires microscopical examination. Experience has shown it to be desirable to give chemical and microscopical instruction at the same time or during the same semester. The same instructor should teach both, but if that is not possible, the departments should coöperate. As an example of need for combined examination, presence of albumin may or may not be significant. In warm weather, samples in transit and not properly preserved often show abundant bacteria from which it is possible for sufficient albumin to be extracted to give a positive chemical test for albumin. Uric acid, triple phosphates, calcium oxalate, leucine, tyrosine and cystine are revealed microscopically by type of crystals. It is common to speak of the chemical test for blood but it is a test for hemoglobin and does not reveal whether there is a hemoglobinuria or a hematuria. Hematuria indicates a pathological condition of the genitourinary tract; hemoglobinuria is usually the result of abnormalities outside the genitourinary tract. Hematuria, in addition to giving positive chemical test, will be indicated by finding unruptured red corpuscles, microscopically. Pus cells, casts and mucus will be found by microscopical examination when chemical tests are negative. It is difficult to get all important data into one course. A number of notations were added to those in the course outlined by Professor Greene.—LOUIS GERSHENFELD. *J. Am. Pharm. Assoc.*, 24 (1935), 417. (Z. M. C.)

Urinalysis—Teaching, to Students of Pharmacy. The author believes that urinalysis should be retained in the curriculum of pharmacy, at least as an elective, equivalent in hours and credit to the biochemistry outlined in the Syllabus. The course should teach the technique of routine examination of normal and pathological urines. Time is insufficient for microscopic or bacteriological analysis. The paper continues with some details of how the course is given at Howard University, some special means of creating interest on the part of the students and concludes with an outline of the course.—ANTOINE E. GREENE. *J. Am. Pharm. Assoc.*, 24 (1935), 166. (Z. M. C.)

MISCELLANEOUS

Dentists and Pharmacists—Professional Relations between. Suggestions for the Improvement of. Though dentistry has been practiced for centuries, dentistry as a distinct profession dates from 1839 when the Baltimore College of Dentistry, the first dental school in the world was established. As the profession has advanced, it has been increasingly exploited by manufacturers. Use of preparations about which they know little is unconsciously encouraged by dentists because much prescribing is done by word of mouth. They are inadequately trained in prescribing and there is constant pressure by detail men. The American Dental Association is aware of this condition and has established a Council on Dental Therapeutics. The purpose of the Council is to acquaint the profession with useful drugs and their preparation and to expose useless or unacceptable things. These findings are reported each month in the *Journal of the American Dental Association* and they will be compiled in a book similar to the New and Non-Official Remedies of the American Medical Association. Personal contact of individuals of both professions offer many opportunities for suggestions for prescriptions to take the place of proprietary articles. In most dental schools, students have little opportunity to prepare or combine drugs and dentists lack confidence in writing prescriptions. Since dentistry is becoming more of a preventive science and the need for laboratory tests will become greater as time goes on, this is in no way an encroachment on the practice of medicine. Pyorrhea is a case in point. A dentist should have a knowledge of the blood-sugar before undertaking treatment. By having a white count and a granulocyte count it would be a simple matter to differentiate between Vincent's infection and granulocytosis. Postgraduate courses should be sponsored by pharmacy and dental schools. The men in pharmacy should be available to dental societies and other groups who need information about more efficient drugs.—C. L. WHITMAN. *J. Am. Pharm. Assoc.*, 24 (1935), 392. (Z. M. C.)

U. S. P. and N. F. Publicity in a Retail Pharmacy—The Successful Application of. The author explains some of the means of publicity adopted.—LAWRENCE S. WILLIAMS. *J. Am. Pharm. Assoc.*, 24 (1935), 395. (Z. M. C.)

PHARMACOLOGY, TOXICOLOGY AND THERAPEUTICS

PHARMACOLOGY

Acetyl Beta Methylcholine—Action of, on Ventricular Rhythms Induced by Adrenaline. Acetyl beta methylcholine in man tends to counteract the effect of adrenaline on the rhythmic property of the ventricles.—M. H. NATHANSON. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 1297. (A. E. M.)

Adonidin—Minimum Emetic Dose with. The Magnus Hatcher method of biological determination by the cat can be used to determine *Adonis I* with the same security as with digitalis. The lethal dose for the cat is 0.476 mg./Kg. It has a diuretic action.—M. F. PASTOR, E. E. IMAZ and C. GRIOT. *Rev. asoc. med. Argentina*, 46 (1932), 1515; *Anales asoc. quím. Argentina*, 22, 219B; through *Chem. Abstracts*, 29 (1935), 3466.

Alcohol—Extent of Absorption of, at Various Intervals after Oral Administration. The percentage of absorption is, after $^1/_2$ hour 57.7%, after one hour 88.5%, after one and $^1/_2$ hours 93.4% and practically complete after 2 hours.—R. N. HARGER and H. R. HULPIEU. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 1247. (A. E. M.)

Amidopyrine—Effect of, on Leucocyte Count. Rabbits, infected with the respiratory disease, snuffles, or with an acute intestinal disease characterized by diarrhea, loss in weight and death, developed a pronounced leucocytosis. Large daily doses of a preparation containing amidopyrine and 5,5-diallylbarbituric acid (cibalgine) (I), 1–4 tablets, were given to rabbits of the following groups: normal rabbits, infected rabbits and thyroidectomized infected animals. Leucocyte counts were made on corresponding animals not receiving I. The authors conclude that I does not diminish the number of leucocytes in the circulating blood of normal rabbits when given in large doses for 17 consecutive days. The pronounced leucocytosis which occurs in rabbits with snuffles or gastrointestinal infection is not depressed by I, administered over 17–30 days. Rabbits thyroidectomized 6 weeks previously and receiving I develop a leucocytosis in response to the infections comparable to that which develops in rabbits with thyroids intact. Many differential counts were made from time to time of animals to which the drug was administered. The percentage of granulocytes of the total leucocyte count was at all times within the range of normal variations. Table.—M. M. KUNDE, R. P. HERWICK, A. LEARNER and M. STERNBACK. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 1121; through *Squibb Abstr. Bull.*, 8 (1935), A-725.

Amytal—Effect of, upon Pilocarpine-Induced Submaxillary and Gastric Secretion. Amytal causes a delayed shortening of the pilocarpine induced secretion. The effect appears on the second day or later.—MARY F. MONTGOMERY. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 1287. (A. E. M.)

Bichromate—Skin Sensitivity to. A case showing a high degree of specific sensitization of chromates is reported. A definite skin reaction was obtained with 0.000,0033 Gm. of potassium bichromate applied externally and with 0.000,000,0033 Gm. on intradermal inoculation. Attempts at passive transfer yielded negative results.—C. E. HERCUS. *Lancet*, 228 (1935), 985. (W. H. H.)

Caffeine, Coffee and Decaffeinated Coffee—Effect of, upon Blood Pressure, Pulse Rate and Simple Reaction Time of Men of Various Ages. These studies were made upon sixteen men who received coffee or caffeine plus decaffeinated coffee. Decaffeinated coffee did not affect the reaction time. Two mg. of caffeine or the equivalent of coffee per Kg. shortened the reaction time as compared with decaffeinated coffee in some individuals and lengthened it in others. With doses of 3–4 mg. of caffeine per Kg. the initial reaction time was shortened as compared with the caffeineless coffee, but on the following day the reaction was frequently longer. One to two hours after coffee (equivalent to 3, 4 and 5.5 mg. of caffeine per Kg.) the blood pressure was higher (5–10 mm. Hg) and the pulse rate slower in some individuals, and faster in others, than the blood pressure and pulse rate after the decaffeinated coffee. The changes in blood pressure and pulse rate elicited by coffee were more pronounced in the older men than in some of the younger ones.—KATHRYN HORST and WILLIAM L. JENKINS. *J. Pharmacol.*, 53 (1935), 385. (H. B. H.)

Colchicine—New Physiological Property of. Intravenous injection of 0.05 mg. epinephrine (adrenaline) (I) in a 16.5-Kg. dog chloralosed, bivagotomized at the neck and subjected to artificial respiration, increased the carotid pressure 114 mg. mercury and totally inhibited peristalsis for 87 seconds. After the intravenous injection of 2.75 mg. colchicine (II) per Kg. in 4 successive doses,

the above dosage of I raised the carotid pressure 172 mm. mercury and stopped peristalsis for 108 seconds. Experiments with another dog using larger doses of II up to 15.5 mg. per Kg. gave similar results. Thus II, like cocaine and several related substances, increased the motor and inhibitor effects of I on the whole animal.—R. HAMET. *Compt. rend. soc. biol.*, 118 (1935), 1292; through *Squibb Abstr. Bull.*, 8 (1935), A-731.

Corynanthine—Antagonism of, to Epinephrine. Tested on the rabbit's cornea, cocaine has one-half and corynanthine one-eighth the anesthetic activity of yohimbine. In chloralosed 10–11 Kg. dogs intravenously injected with 35–60.5 mg. of corynanthine hydrochloride, the intravenous injection of epinephrine provoked slight polypnea instead of apnea. In one case although the epinephrine was rendered slightly hypotensive by corynanthinization, it produced a transient cessation of respiration before slight polypnea, indicating that the respiratory effects are not exclusively dependent on the modifications of the blood pressure.—R. HAMET. *Compt. rend. soc. biol.*, 118 (1935), 774; through *Squibb Abstr. Bull.*, 8 (1935), A-651.

Croton Oil—Action of Substances Isolated from. The strongest active substance isolated from croton oil is croton resin. But since it is normally not present in croton oil it must be considered as an artificial product. The non-toxic basal substance is phorbol, $C_{20}H_{28}O_6$. Acetylphorbol, $C_{28}H_{38}O_{10}$, is a crystalline substance the activity and toxicity of which are very similar to that of the amorphous croton poisons. It stimulates the central nervous system, has a pressor effect on the blood-pressure and stimulates the vagus of warm-blooded animals. In large doses it has a paralyzing action (narcosis of cold-blooded animals). In low concentrations it causes contraction of smooth muscles (vasoconstriction and peristalsis). The automatic centers of the frog's heart are paralyzed at an early stage.—R. BÖHM, B. FLASCHENTRÄGER and L. LENDLE. *Arch. exptl. Path. Pharmakol.*, 177 (1935), 212; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 152.

Digitalis—Assay of Preparations of, in Man. Digitalis assay in frogs and cats is not absolutely accurate. The activity of digitalis preparations should be tested separately in each patient affected with heart disease by comparing the dose with that of *k*-strophanthin found adequate in maintaining the proper heart conduction. The ratio thus obtained gives an accurate measure of digitalis potency and may be compared with values similarly determined in other cardiac cases. The digitalis preparation must be administered for a considerable length of time. The heart is found to undergo changes in response when its weakness has been improved by administration of digitalis. Disturbances in heart beat such as bigeminy and decrease in conduction are not signs of digitalis hyperdosage as previously supposed. They are not to be considered accurate measures of the intensity of digitalis action. The circulatory action of digitalis compounds is determined by the condition of the circulation. Once it has changed the status of the circulation digitalis subsequently reacts differently. Strophanthin is not useful as a basis of comparison with digitalis preparations in the non-congestive type of heart disease. Here, various preparations should be compared directly with each other, by the intravenous route. The activity of various digitalis preparations as assayed in 25 individuals is as follows: 0.3 mg. *k*-strophanthin intravenous is greater than 0.75 mg. digilanid orally, 1.5 mg. digilanid rectally, equal to 0.8 mg. digilanid intravenously, greater than 0.3 mg. helleborein intravenously, 0.6 Gm. digipurat orally, 3600 frog units convallaria orally, less than 1 cc. digalen intravenously; 0.3 Gm. digitalis orally is greater than 6000 frog units convallaria orally, and rectally greater than 3000 frog units orally; 0.8 mg. Verodigen orally is greater than 3000 frog units convallaria orally; 0.8 mg. digilanid intravenously is equal to 0.3 mg. strophanthin intravenously; 0.7 mg. digilanid intravenously corresponds to 0.25 mg. strophanthin intravenously.—E. EDENS. *Klin. Wochschr.*, 14 (1935), 414; through *Squibb Abstr. Bull.*, 8 (1935), A-577.

Digitalis—Potency of Oregon. Conflicting evidence regarding physiological activity of digitalis is found by examination of the literature. It grows wild on the Pacific slope from Vancouver to California and report is made of a seasonal study of it in Oregon. Monthly collections of both first-year and second-year leaves during the spring and summer of 1932–1933. Tinctures were prepared according to U. S. P. directions and the tinctures were stored in a cool place. They were assayed by the official "one-hour" frog method using frogs of the species, *Rana pipiens*. An attempt was made to correlate physiological activity with seasonable glucosidal content by the proposed colorimetric method of Knudsen and Dresbach but there was difficulty because it seemed impossible to compare tinctures which were greenish with the standard ouabain solution which was dark yellowish. The following conclusions were reached: "the physiological activity of first-

year leaves compared favorably with the second-year leaves; the activity of native digitalis plants under favorable climatic conditions would probably be above U. S. P. standard; the one-hour frog method is unsatisfactory chiefly because of the time element which has a tendency toward erratic results; observed only a slight difference in the susceptibility of frogs to cardiac stimulants through various seasons."—DONALD KUO-CHIH LEE and ERNST T. STUHR. *J. Am. Pharm. Assoc.*, 24 (1935), 367. (Z. M. C.)

Digitalis—Rectal Absorption of, in Cats. Since digitalis frequently causes nausea and vomiting, when administered by mouth, administration by rectum has been suggested and preparations for use that way have been offered to the medical profession. A study was undertaken to determine what preparation is best suited to rectal use. In a preliminary experiment a dealcoholized fluidextract was administered to two cats by rectum. There was difficulty in keeping the digitalis solution in the rectum because of the severe irritation but enough was retained to cause death in from 3 to $3^1/_2$ hours. Five series ranging from 5 to 15 each were carried out to determine rate of absorption of different preparations. Results of each series are tabulated so that comparisons are readily made. Suppositories with powdered digitalis and with extract of digitalis in cacao butter base, suppositories with glycerinated gelatin alone and lastly a dealcoholized tincture were used. The cats were kept under light anesthesia throughout. After 5 hours after administration of the rectal preparation standardized digitalis solution sufficient to cause death was introduced intravenously. Clinical reports highly recommend rectal digitalis therapy but findings in this investigation do not confirm those reports. Absorption was slow and small in amount, irregular and erratic. The most rapid absorption was observed when dealcoholized tincture was used. Nausea and emesis occurred in the interval elapsing between the rectal administration and the intravenous administration in about half of the experiments but may have been due to the anesthetic. Autopsies disclosed considerable irritation and inflammation. The actual significance of these results will not be evident until the absorption rate following oral administration has been determined in the same manner. The rectal method should have more investigation before it is accepted as conventional.—W. ARTHUR PURDUM. *J. Am. Pharm. Assoc.*, 25 (1935), 374. (Z. M. C.)

Digitalis—Studies on the Bioassay of. III. A New Diuretic Cat Method. In toxic amounts digitalis has a peripheral constrictor effect on the blood vessels of the kidney in animals, which, taken with the weakening effect on the circulation, decreases output of urine (oliguria). Since digitalis has a cumulative action, oliguria should follow repeated administration of small doses and effect may be measured by measuring urine output at short intervals. Increase in toxic activity as shown by decreasing output of urine should serve as guide to rate and amount of administration in intravenous methods of assay and by indicating approach of death make possible a more accurate determination of minimum lethal dose than the continuous intravenous injection. The following experimental procedure was tried on the cat. Three tinctures were tested. The change from diuresis to oliguria was studied. Minimum lethal doses were determined and compared with those by other methods. Experimental procedure is given in considerable detail and a typical protocol of procedure and results is reported. Comparison of minimum lethal doses of the three tinctures are shown by table as well as the comparison of this method with four other methods. The assays corroborate observations made in the literature that cats vary in susceptibility to digitalis. Assays of one tincture were very uniform but the others showed large positive and negative variations. Variations in frogs and guinea pigs are not so important because large numbers can be used. In the new method the drug is not injected continuously and this should be an advantage because digitalis acts slowly making an accurate determination difficult if a rapid, continuous injection method is used. The constantly decreasing output of urine is more easily discernible than the heart changes ordinarily observed by auscultation in the usual cat method. Best results were obtained with cats weighing from 2 to 3 Kg., those above or below these weights showing wider variation in susceptibility. The wide individual variation in susceptibility to digitalis makes their value questionable since in practice only a few animals can be used. Results of dog and guinea pig assays agreed more closely with each other than with those of the cat method.—JAMES H. DEFANDORF. *J. Am. Pharm. Assoc.*, 24 (1935), 369. (Z. M. C.)

Dinitrophenol—Effect of, on Heart. The amplitude of contraction of the Straub frog heart and rhythmic frog heart muscle strips was irreversibly decreased by 1:1,000,000 2,4-dinitrophenol (I) or 4,6-dinitro-*o*-cresol (II). II was more toxic than I, its effect being apparent in concentra-

tions of 1:5,000,000. I in concentrations of 1:150,000 decreased the minute volume in the Starling heart-lung preparation of a cat from 94.5 to 42 cc. within 9 minutes. Again, II was more toxic, producing an immediate decrease in the minimum volume and in arterial pressure. Concentrations of 1:30,000 of II rapidly arrested the heart. With the average dose of 3–5 mg./Kg. of I and 0.5–1 mg./Kg. of II, the concentration of the drugs in the human body fluids is 1:220,000–1:115,000 and 1:320,000–1:660,000, respectively, concentrations definitely toxic to the heart preparations.—H. STAUB and K. MEZEY. *Arch. exptl. Path. Pharmakol.*, 178 (1935), 52; through *Squibb Abstr. Bull.*, 8 (1935), A-710.

Drugs—Absorption of, through the Oral Mucosa. Humans and dogs served as the experimental subjects in these tests. As compared with the effectiveness of subcutaneous administration, the ratios for a number of drugs were found to be as follows upon sublingual applications: sodium pentobarbital, 1; apomorphine, 2; strychnine, 4; atropine, 8; morphine, 10; dilaudid, 15; codeine, greater than 15. Adrenaline and insulin produced no distinct effects when administered sublingually even in large doses. There was close agreement between the results obtained in human subjects and dogs in the case of sodium pentobarbital, apomorphine, atropine, morphine, dilaudid and adrenaline.—ROBERT P. WALTON and C. FRANK LACEY. *J. Pharmacol.*, 54 (1935), 61. (H. B. H.)

Drugs—Effect of Altitude on the Action of. I. Strychnine. Report is made of an investigation whose purpose was to make quantitative studies of the variation in lethal doses and the speed of action, all variables except altitude being kept constant. Strychnine sulphate was used. In one series of experiments, one hundred tame rats were used, in the other, Columbian ground squirrels. The rats were purchased in Denver, and half of them sent to Hillsboro, Oregon. Feed was purchased in Denver and divided. Animals were held for three months to insure acclimatization. The poison solution was prepared in Denver and divided. The same technique of administration was employed. Room temperature, barometric pressure, relative humidity and character of weather were recorded. Conditions checked well, so barometric pressure was chief variation. Climatological comparisons are given in one table, other tabulations showing detailed experimental results, correlations on the basis of probable errors of the averages, averages with survival evaluations included, significance of correlations and experimental results for Columbian ground squirrels—oral administration. The lethal dose for 100% of the rats tested was 12.50 mg./Kg. at Hillsboro and 10.00 mg./Kg. at Denver. Also 10/10 animals at Hillsboro died in 25 minutes after 4.1 minutes of the intermittent tetany while at Denver the figures were 15.0 and 4.0 minutes, respectively. The following conclusions were drawn: "1. A change in elevation of 5000 feet caused a 20% reduction in LD_{100}% and a 40% decrease in the T/D (time to death), following oral administration of strychnine as the sulphate to tame rats. 2. Statistical analysis shows the effects observed are not highly significant, ranging from 1–20 to 1–5000. 3. Inclusion of survivals by a percentage system of evaluation, causes the curves to approach the ideal. 4. Successive increase of elevation of 1000 feet produced a definite and fairly constant reduction in LD_{100}% of strychnine administered orally to Columbian ground squirrels. 5. Ground squirrels appeared to be more susceptible than rats to changes in elevation."—A. W. MOORE and JUSTUS C. WARD. *J. Am. Pharm. Assoc.*, 24 (1935), 460. (Z. M. C.)

Ergot—Biological Determination of Alkaloids of. Ergot alkaloids can be readily determined on the basis of their antagonistic action to adrenaline. The rhythmic oscillations of surviving rabbit intestines are decreased by adrenaline and this effect of adrenaline is prevented by the alkaloids of ergot. As the reaction is reversible the same portion of intestine can be used two or three times. The effect of 2γ adrenaline was decreased 27.5% by 3γ ergotamine; 54.3% by 4.5γ; 57.4% by 5γ; and 71.5% by 7.5γ ergotamine. Sensibamine separated from Hungarian ergot is as strong as ergotamine.—B. ISSEKUTZ and M. LEINZINGER. *Magyar Gyógyszerésztud. Társaság Értesitője*, 11 (1935), 171; through *Chem. Abstr.*, 29 (1935), 3775.

Evipal—Hypnosis, Anesthesia and Toxicity. These studies were made upon rabbits and rats to which the drug was given, with but one exception, intraperitoneally. The optimal hypnotic dose was found to be 50 mg. per Kg. for rats. The optimal anesthetic dose is 100 mg. per Kg. for the rat and 70 mg. per Kg. for the rabbit. The response of both of the species of animals to Evipal intoxication is described. The M. L. D. for the rat is 280 mg. per Kg.; the toxic-anesthetic-hypnotic ratios in the rat being 100:36:18. The authors conclude that this compound has a high coefficient of effectiveness.—A. H. MALONEY and R. HERTZ. *J. Pharmacol.*, 54 (1935), 77. (H. B. H.)

Follicular Hormone—Assay of, in Commercial Preparations. The assay method employed for a large series of commercial preparations was the following: Of a group of 9 castrated mice, 3 were given an amount corresponding to the claimed unit, 3 an amount 20% lower and 3 an amount 20% higher. A positive reaction was determined as usual by the vaginal streak. The smallest amount giving a positive reaction was then injected into 20 mice, while 20 further mice were given a unit of the standard preparation under the same conditions. In the majority of instances, 20 additional mice received either a 20% higher or 20% lower dose subcutaneously in order to substantiate the results. An ovarian preparation, made from crystalline follicular hormone and containing 10 mouse units per cc. and giving a positive reaction in 90% of animals, was used as a standard for the water-soluble preparations, and one containing 500 mouse units per cc. and giving 95% positive reactions was used for comparison with the oil-soluble hormone preparations. The results were as follows for number mouse units per cc. as claimed and as found and for percentage positive reacting mice, respectively: (1) Water-soluble preparations: Fontanon 100, 100, 78; Hovigal 100, 100, 83; Hormofollin 100, 200, 80; Menformon 100, 133, 85; Oestranin 100, 100, 75; Ovodis-Extract 100, 100, 73; Ovoglandol 50, 50, 92.5; Ovoliquit 50, 50, 70; Panhormon 50, 40, 70; Progynon 20, 20, 98; Unden 10, 10 73; Agomensin —, 10, 85; Ovaralopton —, 0, —; Ovarium-Extract —, 0, —; Rejuven —, 0, —; (II) Oil-soluble preparations: Perlatan 1000, 1000, 87; Sistomensin —, 1, 70; (III) Solid preparations (tablets, etc.), where unit is per tablet or dragee: Novarial 150, 150, 70; Oestranin 100, 100, 80; Oophorin 50, 50, 92.5; Ovanorm 20, 20, 92.5; Ovoglandol 20, 20, 95; Ovosedicyl 10, 10, 80; Ovotransannon 10, 10, 95; Panhormon 10, 7-8, 75; Biovar —, —, —; Novokap —, —, —; Ovaraden —, —, —; Ovaria sicc. (Grubler) —, —, —; Ovaria sicc. (Merck) —, 3, —; Ovarial tablets —, 16–20, —; Ovarial powder —, 4, —; Ovarigen —, 2, —; Ovarium tablets —, 2, —; Ovarochrom —, 2, —; Ovoglandosan —, 1.5, —; Ovohorma —, 1, —; Vitrisol m. Ovaria —, traces, —; Zettolax —, traces, —. In the case of the latter preparations the unit value based on 100 Gm. dry substance was calculated to be Biovar 4000; Novokap 1500; Ovaraden 800–900; Ovaria sicc. (Grubler) 2000; Ovaria sicc. (Merck) 4300; Ovarial powder 4000; Ovarigen 2000; Ovarium tablets 4000; Ovoglandosan 1250.—M. KOCHMANN. *Arch. Exptl. Path. Pharmakol.*, 177 (1935), 526; through *Squibb Abstr. Bull.*, 8 (1935), A-591.

Gonadotropic Hormone—An Improved Method for Determination of the. A method of extraction of 40 cc. of blood by acid alcohol method is described. The material is tested on an immature female rat.—U. J. SALMON and ROBERT T. FRANK. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 1236. (A. E. M.)

Liver Preparations—Use of Pigeons in the Assay of. The results of previous workers are summarized. The following method for staining pigeon reticulocytes is recommended: A drop of blood is taken up in a graduated micro-pipette and blown on to a waxed slide. Exactly twice the volume of stain (aqueous solution containing 0.3% brilliant cresyl blue and 1% sodium citrate) is added and mixed with the blood. Incubate for 15 minutes at 35° C., then immediately make thin smears on a clean glass slide, spreading with the edge of another slide, and dry in the air. Allow to stand for 1 hour before counterstaining for 3 minutes with undiluted Jenner's stain. The staining solution should be fresh. Only "densely reticulated" cells (cells showing a complete or almost complete ring of reticulum around the nucleus) should be counted. No correlation could be found between the reticulocyte count and administration of liver extract to pigeons that had been fed on a grain diet. The author suggests the use of a mammalian test-animal for reticulocyte tests; because the reticulocyte percentage of the blood of mammals is a definite figure and is easily obtained.—M. R. GURD. *Quart. J. Pharm. Pharmacol.*, 8 (1935), 39–53. (S. W. G.)

Magnesium Salts—Comparative Studies on the Utilization of Different. Little information is available concerning relative utilization of magnesium compounds occurring naturally in foodstuffs as compared with the lactate and citrate and inorganic magnesium compounds. The present study was undertaken for the purpose of finding out if there were differences. Young white rats were used as experimental animals. Calcium and phosphorus balances were carried at the same time. Calcium, phosphorus and magnesium concentrations were kept fairly constant. Formulas for diet are given and all details are reported. The different compounds used do not differ materially in absorption or utilization. The greatest and the least retentions were obtained with the same magnesium salt. Magnesium absorption measured by the sum of the urinary and retained magnesium averaged 32.5% of the intake, varying between 29 and 41%. "Carswell and Winter have shown that after oral administration of magnesium lactate one may obtain either high

calcium and low magnesium or low calcium and high magnesium retentions." Probably magnesium compounds in linseed meal and alfalfa producing low calcium and high magnesium retention is not due to any difference in behavior. Addition of sodium carbonate up to 2% of the diet had no unfavorable effect on utilization of calcium, phosphorus or magnesium.—J. C. FORBES and F. P. PITTS. *J. Am. Pharm. Assoc.*, 24 (1935), 450. (Z. M. C.)

Male Fern—Rhizome and Extract of. After reviewing the methods of bioassay of male fern, the author describes a method studied at Lund in 1933. The organism used is the tench fish (*Tinca*) of 5–10 cm. length. A weighed quantity of the drug extract (1 to 20 cg.) is triturated with 0.5 Gm. sugar and then shaken with a liter of water, saturated with magnesium hydroxide. Ten fish are put in each flask with a liter of fluid. Concentrations ranging between 0.025–0.001% are used. The number of fish killed in 4 to 6 hours is recorded. The biological test shows the chemical assay for filicin (as given in the Swedish and the new Danish Pharmacopœias) to be invalid.—T. AHLM. *Farm. Revy*, 34 (1935), 309. (C. S. L.)

Mercurial Antiseptics—Action of, on Muscle Oxydase. The inhibitory or depressant effect of various mercurials for the muscle enzymes does not run parallel to their antiseptic activity but is rather an index of their toxicity. Mercurochrome 1:250 to 1:100, while quite efficient to destroy bacteria, did not inhibit the action of muscle oxydase to any great extent, while solutions of mercuric bichloride (1:10,000 to 1:5000) were markedly depressant for the enzymes.—DAVID I. MACHT and HILAH F. BRYAN. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 1244. (A. E. M.)

Morphine, Codeine and Dilaudid—Comparison of Motor Effects of, on Thierry Fistulæ. These studies were made upon dogs in which intestinal motivity was determined by the use of balloons inserted into Thierry preparation. The authors conclude that morphine, codeine and dilaudid cause prompt spastic effects which are quite similar. The minimal dosages in terms of mg. per Kg. producing a twenty-minute spastic period are: dilaudid, 0.01; morphine, 0.30; codeine, 3.0. Dilaudid was found not to produce the prolonged periods of spasticity characterizing the action of morphine and codeine.—ROBERT P. WALTON and C. FRANK LACEY. *J. Pharmacol.*, 54 (1935), 53. (H. B. H.)

Morphine—Effect of, on Human Ureter. The effect of morphine on the intact human ureter was studied in 24 patients with presumably normal kidneys, by means of hydrophotographic tracings by Trattner's method. Some patients were subjected to radioscopy. Subcutaneous doses of 1.8–1.2 gr. caused markedly increased tone and larger amplitude of contraction waves in from 2–5 minutes following injection of the drug. When increasing doses were given at $^1/_2$-hour intervals, the larger clinical dose of $^1/_2$ gr. gave a greater effect than the smaller doses of $^1/_6$ to $^1/_4$ gr. The effect lasted at least three hours. Doses of 0.01 gr. atropine eliminated the contractions of the morphine-stimulated ureter with consequent loss of tone. Atropine did not act strikingly or consistently when given alone. The authors consider that the common idea that morphine quiets the ureter is incorrect. Their findings confirm experimental data. The literature is reviewed.—N. F. OCKERBLAD, H. E. CARLSON and J. F. SIMON. *J. Urology*, 33 (1935), 356; through *Squibb Abstr. Bull.*, 8 (1935), A-661.

Nembutal—Effect of, upon Serum Cholesterol of Dogs. Nembutal sufficient to produce deep and prolonged narcosis has no influence on the serum cholesterol.—E. H. BIDWELL, F. H. SHILLITO and K. B. TURNER. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 1235. (A. E. M.)

Pharmacological and Toxicological Viewpoints in Cosmetology. The action of the following are discussed: water, metallic salts, sulphur, iodine, acids and alkalies, hydrogen peroxide, formaldehyde, tannin, glycerin, alcohol, volatile oils and soaps. An extended bibliography is offered.—H. TRUTTWIN. *Riechstoff-Ind. Kosmetik.*, 10 (1935), 101–103. (H. M. B.)

Pumpkin Seeds—Anthelmintic Action of. The seeds of *Cucurbita pepo* were examined chemically and biologically. The test animals were earthworms. The fatty oil was extracted in a Soxhlet percolator with petroleum ether. A 45% yield of a reddish oil was obtained. For the biological test a 5% emulsion of the oil in water and a 10% trituration of the fresh, peeled seeds in water were used. About 150 cc. of each preparation was placed in a beaker and three worms were dropped into each solution. The trituration showed anthelmintic action but the emulsion did not. The resin extracted from the oil by alcohol was tested as above with negative results. Ten per cent aqueous, hydroalcoholic and alcoholic extracts were likewise inactive. Tests for glycosides, alkaloids and resin were negative. The negative results obtained and the prohibition of the use of hot water in making a paste of the seeds suggested the presence of a volatile constitu-

ent. Fifty grams of the crushed, peeled seeds were steam distilled until 100 cc. of distillate were collected. This distillate killed worms within 15 minutes. The carrier of the anthelmintic action of pumpkin seeds is therefor a volatile substance. The experiment was repeated several times with seeds from various sources with similar results except that the activity of the various distillates varied greatly. No reason could be assigned for this. The following tests applied to the distillate were all negative: ferric chloride, Schiff, Millon, Legal, Fehling, Nessler and Deniges reagents, lead acetate and silver nitrate. Diazotization and addition of phenol produced no perceptible color. The distillate after oxidation with incandescent strips of copper gave a red color with Schiff's reagent. Methyl and ethyl alcohol were not present.—A. PFISTER. *Pharm. Ztg.* 80 (1935), 394. (G. E. C.)

Pyrethrin I and Pyrethrin II—Relative Toxicity of. Pyrethrin I and II were prepared by extraction with kerosene and the mixture purified by dissolving in pentane, extracting with hot methyl alcohol, the alcohol mixed with water and the pyrethrins again extracted with pentane. After drying, the solution was cooled to $-50°$ and pyrethrin II precipitated, pyrethrin I remained in solution. Injected into frogs, (II) produced death in doses of 75 mg. per Kg. of body weight, (I) in doses of 80 mg. per Kg. while a mixture of equal parts of (I) and (II) only required a dose of 66 mg. per Kg.—JEAN RIPERT and OLIVIER GAUDIN. *Compt. rend.*, 200 (1935), 2219. (G. W. H.)

Salyrgan—Intrapleural Injection. Intrapleural injections of Salyrgan produce a greater and more lasting diuretic effect than do the intravenous injections.—S. HORWITZ. *Deut. Med. Wochschr.*, 61 (1935), 305. (H. R.)

Splenic Capsule—Effect of Drugs on the Isolated, of Man and Other Animals. The following summary is given: 1. A survey was made of the action of various drugs on isolated strips of the capsule of human spleens and the splenic capsules of dogs, rabbits, cats, rats, guinea pigs and buffaloes. 2. Contraction of the splenic capsule was produced by adrenaline, pilocarpine, arecoline or histamine and under certain conditions also by acetylcholine. 3. If the tone of the splenic capsule had first been increased by adrenaline, it was inhibited by the addition of atropine, pituitary (posterior lobe) extract, sodium nitrite or ergotoxine and under certain conditions also by acetylcholine and adenosine. 4. The contractor action of acetylcholine was increased by eserine. 5. The contractor actions of acetylcholine, arecoline and pilocarpine were abolished by atropine. 6. The action of adrenaline was abolished by ergotoxine and diminished by cocaine. Tracings showing the results obtained are given for each series of actions.—K. SAAD. *Quart. J. Pharm. Pharmacol.*, 8 (1935), 31–38. (S. W. G.)

Strychnine and Barbiturates—Elimination of. Regardless of the amounts of strychnine administered, the quantities recovered in the urine are small, elimination by the kidney being very slow. The amounts of strychnine in the organs are also very small. The elimination of Gardenal in the urine is also slow, the amounts rejected by the kidney being of some importance.—E. KERGONOU. *Bull. soc. pharm. Bordeaux*, 73 (1935), 53–61. (S. W. G.)

Thymus Extracts—Biological Effects of. The outstanding physiological feature of the thymus gland is its growth during youth and involution at puberty. A group of American workers (L. G. Rowntree, J. W. Clark and A. M. Hanson) who worked with an extract of calves' thymus found that, in rats which were the offspring of thymus-treated rats (themselves also treated) until the fifth generation, the appearance of important physiological events such as opening of ears, eruption of teeth, appearance of hair, descent of testes and opening of the vagina, were greatly diminished as compared to the control litters.—ANON. *Brit. Med. J.*, 1 (1935), 983. (W. H. H.)

Thyroid—Acetonitrile Test for. The acetonitrile test for thyroid using mice of both sexes was carried out varying the conditions of observation. The susceptibility of mice to acetonitrile poisoning, and the degree of protection afforded by thyroid, are both affected by the temperature at which the mice are kept. At 38° C. the average lethal dose is about a fifth of that at room temperature, and practically no protection is afforded by thyroid. At lower temperatures a protective action can be detected, but the dose/mortality curve for acetonitrile becomes very much flattened, making it difficult to apply the acetonitrile test to a quantitative method of assay.—F. WOKES. *Quart. J. Pharm. Pharmacol.*, 8 (1935), 54–60. (S. W. G.)

Thyroid—Assay of Various Preparations of. Feeding of equal amounts of thyroxin in the form of various thyroid preparations, *e. g.*, whole thyroid, iodothyreoglobulin, fractionated iodo-

thyreoglobulin, iodothyrin and thyroxin, produced increasing illness in rats. Some of the substances gave a more pronounced calorigenic effect while in the case of the rest, the other general thyroid actions were predominant. This difference appeared to be dependent upon the nature and amount of iodine-free and iodine-containing substances accompanying the thyroxin. The latter, while inactive or of slight activity in themselves, were capable of influencing the action of thyroxin considerably, *e. g.*, diiodotyrosine had a marked antagonistic effect on thyroid hormone. The thyroxin content of the various preparations examined was determined by splitting the thyroxin component from the accompanying substances by means of alkaline hydrolysis and then determining the amount of thyroxin present either by adjusting the alkaline hydrolysate to p_H 5 or extracting it with butyl alcohol and proceeding in a manner previously described.—I. ABELIN. *Arch. exptl. Path. Pharmakol.*, 177 (1935), 359; through *Squibb Abstr. Bull.*, 8 (1935), A-630.

Thyroxin—Point of Action of. Experiments in anesthetized cats (urethane or 5-ethyl-5-phenyl-barbituric acid) before and after decapitation or section of the spinal cord in the cervical or dorsal region indicate that the main point where the action of thyroxin occurs is the midbrain. Increase in metabolism takes place because of irritation of this center.—B. v. ISSEKUTZ and B. v. ISSEKUTZ, JR. *Arch. exptl. Path. Pharmakol.*, 177 (1935), 442; through *Squibb Abstr. Bull.*, 8 (1935), A-630.

Vegetable Extracts and Blood-Sugar. Attention is directed to products from vegetable and animal sources, brought out since the discovery of insulin and like it capable of producing hypoglycemia. It was observed, too, that the serum or difibrinated blood of an animal made hypoglycemic by insulin, by the plant extracts, by chemicals, by starvation or by pancreatectomy would lower the sugar in another animal and could even cause death. Apparently there was no limit in the possibility of transmission of decrease in sugar and toxicity from one individual to another. Myrtomel (earlier called myrtillin) had rather marked claims made for it but clinical experience was not encouraging. The present investigation was undertaken to determine the nature of the substance responsible for the power to reduce the amount of sugar in the blood. Experimental work is reported in detail. Rabbits were the test animals. Normal amount of sugar was determined. Determination was also made of the percentage of sugar produced in stated periods of time by specific doses of epinephrine. An extract from the leaves of salal fed to rabbits and subcutaneous injections were without effect. Results with *Vaccinium ovatum* were negative. So some of the work on myrtomel was repeated but results were negative. Then the earlier work of Collip was repeated, using an extract from green onion tops, from lettuce leaves and from cabbage, all with negative results. Attempts to verify Collip's observation that hypoglycemia can be transmitted from one animal to another resulted in failure. The authors conclude that "reputed therapeutic value of plant extracts in the control of blood sugar is erroneous." Collip's work might indicate that the large quantity of liquid injected and the period of starvation could derange metabolism. Other works apparently drew conclusions from too few experiments. The authors believe it entirely reasonable to "question the existence of evidence that plants contain a substance which will alter amounts of sugar in the blood."—PAUL S. JORGENSEN and E. V. LYNN. *J. Am. Pharm. Assoc.*, 24 (1935), 389. (Z. M. C.)

Vitamin A—Various Methods for Determination of. A brief review of physical and biological methods (especially the U. S. P. Interim Revision method) for the determination of vitamin A, with bibliography.—B. RÖNNARK. *Farm Revy*, 34 (1935), 369. (C. S. L.)

Vitamin D—Content of, in Salve Bases Containing Cholesterol. I. Absorption through the Intestinal Mucosa. Anhydrous lanolin contains the provitamin, which on proper irradiation, is transformed into vitamin D and then possesses antirachitic properties, yet lacks toxic action, *e. g.*, does not produce calcium deposits. **II. Absorption through the Skin.** The vitamin D produced in these salves by proper radiation is absorbed through the skin and then exerts its antirachitic action without toxic action. Under comparable conditions, essentially more vitamin D is absorbed through the intestinal mucosa than through the skin. Either ordinary or irradiated ergosterol apparently causes a thickening of the elastic coat in the rabbit aorta; cholesterol does not exert this action. Irradiated ergosterol is absorbed through the skin.—A. ST. VON MALLINCKRODT-HAUPT. *Z. Vitaminforsch.*, 4 (1935), 1, 16; through *Chem. Abstracts*, 29 (1935), 3463.

Vitamin D—Determination of. A review and discussion of the U. S. P. Interim Revision (1934) method for the determination of vitamin D.—B. RÖNNMARK. *Farm. Revy*, 34 (1935), 233. (C. S. L.)

Vitamin Standards—International. International standards for vitamins A, B_1, C and D are now available for issue to laboratories, institutions and research workers in Great Britain and Northern Ireland. The National Institute for Medical Research, London, will continue to supply these standards. The standards for the vitamin B_1 and D remain unchanged and their supply at regular half-yearly intervals will be continued as before. The standard for vitamin A has been changed; a pure specimen of β-carotene having been adopted in place of the impure preparation hitherto employed. The unit of vitamin A remains unchanged, though it is now defined as the vitamin A activity contained in 0.6 microgram of pure β-carotene.—*Pharm. J.*, 134 (1935), 353. (W. B. B.)

Toxicology

Acetanilide Poisoning. Clinical and Experimental Study. The author reviews the outstanding signs and symptoms as taken from the records of several patients poisoned by proprietary preparations containing acetanilide. Two dogs were given acetanilide in their diet, in varying amounts. It was found that these animals developed some tolerance to the drug. The red cell count tended to be diminished initially but as the intoxication progressed the rate of formation of the red cells became greater than the rate of destruction. The animals showed marked fluctuation in their methemoglobin response, the greatest concentration occurred six to eight hours after the drug had been ingested. There was a complete reversion of the methemoglobin to hemoglobin within forty-eight hours. During the methemoglobinemia the oxygen capacity falls and symptoms of anoxemia may result. Electrocardiographic studies revealed no changes of significance.—Sheldon Payne. *J. Pharmacol.*, 53 (1935), 401. (H. B. H.)

Atophan Poisoning. A description of a case of fatal liver damage after several weeks' use of Atophan is given. Overdosage and continuous use without intervals were avoided, thus stressing the danger of this drug.—Hubert Habs. *Deut. Med. Wochschr.*, 61 (1935), 173–174. (H. R.)

Boric Acid Preparations—Toxicity of. Skin Disturbances through the Use of Defatting Agents Containing Boric Acid. Four cases of skin diseases were observed which were directly attributable to the use of defatting agents containing boric acid. The symptoms were an itchy redness of the chin, neck, head and trunk, thickening of the skin which was covered with very fine scales and vesicles; appearance of the trunk and extremities resembling that in pityriasis rosea; or an erythematous, scaly and very itchy exanthema of the trunk, neck and flexor sides of the extremities. The symptoms disappeared with discontinuation of the use of the preparations.—Alois M. Memmesheimer. *Deut. Med. Wochschr.*, 61 (1935), 418. (H. R.)

Caffeine and Theobromine—Effect of, upon Digitalis Toxicity. Employing the cat method of Hatcher and Brody the authors assayed ouabain, strophanthin, digitoxin and three tinctures of digitalis and compared the values so obtained with those upon cats receiving varying amounts of caffeine or theobromine subcutaneously or intravenously. Small doses of caffeine or theobromine did not seem to influence the toxicity of any of these digitaloids. Large doses of caffeine and theobromine (30–50 mg. × Kg. body weight) seemed to slightly increase the toxicity of all the preparations studied. The results indicate that in amounts ordinarily employed clinically caffeine and theobromine probably do not influence the toxicity of ouabain, strophanthin or digitalis preparations to any appreciable extent.—H. B. Haag and J. D. Woodley. *J. Pharmacol.*, 53 (1935), 465. (H. B. H.)

Castor Beans—Toxicity of. A fatality following the eating of 15–20 castor beans is reported. The toxic substance ricin was responsible. This causes necrosis in the blood vessels, tissues and cells through agglutination, coagulation and precipitation.—Abdulkadir-Lufti. *Deut. Med. Wochschr.*, 61 (1935), 416. (H. R.)

Fluorine Toxicosis. Apples sprayed with barium silicofluoride showed an average fluorine content of 5.6 p. p. m. before washing. It was impossible satisfactorily to clean fruit originally carrying 0.1 gr. or more of fluorine per lb. The human tolerance level for fluorine is so low, that it seems a dangerous practice to use the compounds of fluorine for spraying purposes. The ugliness of mottled teeth alone causes untold misery to the afflicted persons.—M. C. Smith. *Am. J. Pub. Health*, 25 (1935), 701. (A. H. B.)

Skin Poisons—A Chapter on Mexican. The following plant products produce skin reactions of various types: (1) *Comocledia engleriana* causing abscesses on mucous membranes of the mouth which are difficult to heal and may be introduced in tobacco, (2) the magic remedy of

Dr. Villegas, Marañon (Makagoninusz, *Anacardium occidentale*) containing cardol, the irritating principle, (3) *nettles* and similar products such as Junco or Flor de Latigo (whipping flowers) which is the flowers of *Aporocactus flagelliformis* Lem, (4) Maguey manso (*Agave salmeana* Otto), (5) Barbas de chivo or Chilillo de Cerro (*Clematis dioica* L.) which contans an alkaloid, clematine, which, however, is not a skin poison, (6) introduced from Europe is Rabano rusticano (*Armoracia rusticana* Gaertn.), (7) Herba del Coyote (*Polanisia uniglandulosa* Capparid.), (8) Pica-Pica del Peru (from Peru) is in the Mexican market as "Ojo de venado" or "Ojo de borrico." Some of these poisons act only on the mucous membranes leaving the epidermis unaffected as (9) Pinoncillo or Aveno purgante, the seeds of *Jatropha curcas* L. var. *mexicana* (10) the Euphorbiacea Yepaxihuitl (*Croton dioicus* Cav.) or Hierba de Zorillo in a short time covers the mucous membranes of the anus with small red spots and inflamed pustules. Others produce inflamed areas under the skin: (11) the sap of Habilla de San Ignacio or Quauhtlatlatzin (from *Hura crepitans* L.), (12) *Hippomane manizella* L. or Mazanillo, (13) Chupire (Chuprene, Tencuate) an unusually irritating poison from the unripe seeds and secretion of *Euphorbia calyculata* H. B. K., (14) the leaves of Cola de pescado, Cola de iguana or Hierba de alacan (*Plumbago pulchella* Boiss.) called by the Aztecs Tlachichinolli, whose irritating sap is used to-day for the treatment of wounds caused by poisonous insects, flies, scorpions, etc., (15) the most common of all is the poison sumach, Cuau or Mala mujer (*Rhus radicans* L.). An extract of Yobe (*Grindelia hirsutella, spec. Californiana*) is of help in counteracting these poisons if applied immediately.—V. A. Reko. *Pharm. Post*, 68 (1935), 173–177. (H. M. B.)

Sodium Amytal—Detoxification of Amidopyrine by. The toxicity of amidopyrine by production of convulsions can be reduced to $^2/_3$ when optimal doses of sodium amytal are given.—Charles L. Rose. *Proc. Soc. Exptl. Biol. Med.*, 32 (1935), 1242. (A. E. M.)

Sodium Formaldehyde Sulphoxylate—Use of, in Acute Mercury Poisoning. The author demonstrates the protective effect of formaldehyde sulphoxylate against mercury poisoning in rabbits, verifying the results that he had previously obtained upon dogs. The substance has been utilized clinically and found to be of distinct value in mercury poisoning. The author suggests the following procedure in its use in the treatment of clinical bichloride poisoning: 1. Gastric lavage with a 5% solution of sulphoxylate, about 200 cc. being left in the stomach. 2. Immediately following this, 10 Gm. of the drug dissolved in 100 to 200 cc. of distilled water to be slowly injected intravenously, from twenty to thirty minutes being permitted for the injection. 3. In severe cases a repetition of the intravenous injection from four to six hours following the completion of the first injection, from 5 to 10 Gm. being injected. 4. If colitis develops later high colonic irrigations with a 1:1000 solution of sulphoxylate.—Sanford M. Rosenthal. *J. Pharmacol.*, 54 (1935), 34. (H. B. H.)

Therapeutics

Calcibronat-Clinical Experience with. *Calcibronat*, $(C_{12}H_{21}O_{12})_2.Ca.CaBr$, is used in the treatment of nervous exhaustion, hypererethism, hyperthyroidism and epilepsy. Due to the synergism existing between the calcium and bromine it can be given in small doses which are effective, over a long period of time without causing bromism or bromide acne.—K. Keus. *Deut. Med. Wochschr.*, 61 (1935), 799–801. (H. R.)

Carcinoma as an Electrical Phenomenon of Protein Substances. The theories of protein formation and their chemistry and those devoted to their connection with tumor and carcinoma formation are fully discussed. It is concluded that a possible remedy against this malady must be capable of regulating the "redox"-potential of glutathione or its heavy metal complex. Such a buffer must be a disulphide as well as an albumin. These regulators have been made by the worker and tried upon certain cases with good results.—O. Hupper. *Pharm. Monatsh.*, 16 (1335), 92–96. (H. M. B.)

Chloral—Use of, in Infant Therapy. Chloral is generally employed in the treatment of convulsions in infants. The modes of administration are reviewed by G. Schreiber (*Bull. Medic.* (Feb. 10, 1934); through *J. Praticiens* (May 10, 1934)). The dose is generally 10 to 20 cg. per year of age. For convulsions the remedy is prescribed separately or together with potassium bromide as follows: Chloral hydrate 0.3 Gm., syrup of orange flowers 30 Gm., distilled water enough to make 100 Gm. Take 1 teaspoonful every half hour (for an infant of 3 years) until sedation. Chloral hydrate 1 Gm., potassium bromide 2 Gm., syrup of codeine 10 Gm., syrup of

orange flowers 10 Gm., distilled water enough to make 100 Gm. Six teaspoonfuls every 24 hours. Chloral hydrate 0.1 Gm., potassium bromide 0.25 Gm., boiled water 40 Gm. For 1 enema. At the same time give a water diet and every 3 hours a warm bath (38°) lasting for 6 minutes. This is continued until a sound slumber is produced. Chloral hydrate 0.2 Gm., cacao butter 2 Gm. For 1 suppository. Introduce 1 or 2 every 24 hours. In the case of tetanus contractions, chloral will give results when most of the common sedatives are without effect.—*L'Un. Pharm.* (Mar. 1935), 68; through *J. pharm. Belg.*, 17 (1935), 429. (S. W. G.)

Cod Liver Oil Ointment "Unguentolan"—Investigation with. Cod Liver Oil Ointment "Unguentolan" is of therapeutic value in treatment of severe burns, *Ulcus cruries*, decubital tumors, fistulas, deep wounds, etc. The action of vitamins A and D seems to cause a marked regeneration of tissue with excellent cicatrization. Parenteral use of vitamins A and D is superior to the oral in the treatment of wounds and burns. The remaining constituents of cod liver oil seem to enhance the action of the vitamins. The ointment is convenient for clinical use and alleviates pain to a great degree.—KURT STRAUSS. *Deut. Med. Wochschr.*, 61 (1935), 50–52. (H. R.)

Digilanid—Clinical Studies with Intestinal and Parenteral Administration of. Clinical experiments for the last year and a half involving some 100 cardiac patients substantiate the findings of many other investigators regarding the good tolerance, rapid diuretic effect and excellent administration of Digilanid. When using the enteral form of administration, it was found that 15 drops of Digilanid 3 times a day *per os* correspond to 3 doses of 0.1 Gm. standard digitalis leaves. There were some isolated failures due to individual hypersensitivity and idiosyncrasy. In the latter case, Digilanid was often given successfully in the form of an enema, the best formula even in severe cases of decompensation, being: 25–30 drops twice daily mixed with 3–5 cc. of 10% glucose solution and 3–5 drops opium tincture. Further potentiation of diuretic action was realized by the addition of 0.3 Gm. Theocin. The intravenous route which is also very effective, is limited to those cases which cannot tolerate the drug perorally and there is urgent need for rapid absorption of the greatest possible amount of Digilanid. Here it is advisable to dilute the Digilanid with 10 cc. calcium gluconate or 10–15 cc. 10–20% glucose. Considerable shortening of the treatment can be affected by combining with diuretics such as Salyrgan, which appear to be more active following the administration of Digilanid. Digilanid does not seem to have the cumulative property to as great a degree as the other digitalis preparations. Clinical blood pressure and water balance are claimed to be more accurate criteria for ascertaining when Digilanid treatment should be stopped than the appearance of bradycardia and electrocardiographic changes. The latter may be independent of Digilanid dosage.—E.-E. BAUKE. *Deut. Med. Wochschr.*, 61 (1935), 371–375. (H. R.)

Digitalis—Effect of, on Pneumonia. A study of 1456 cases of lobar pneumonia indicated that digitalis had no apparent effect on the course of the disease, but seemed beneficial in its influence on auricular fibrillation and flutter in favorable cases. 34 references.—A. E. COHN and W. H. LEWIS. *Am. J. Med. Sci.*, 189 (1935), 457; through *Squibb Abstr. Bull.*, 8 (1935), A-615.

Dye Solutions—Therapeutic. Stable solutions suitable for use by injection in combating infectious diseases contain a 3,6-diaminoacridine compound such as 3,6-diamino-10-methylacridinium chloride and an excess of a sulphonated dye such as trypan-blue, trypan-red or acid fuchsin.—LOUIS BENDA (to Winthrop Chemical Co.). U. S. Pat., 1,999,750 (April 30, 1935). (T. G. W.)

Folinerin. In cases of cardiac insufficiency with and without disturbances in rhythm and wherein digitalis treatment was indicated, the new glucoside folinerin from *Folia Nerii Oleandri*, produced a complete effect on pulse, diuresis, body weight and congestive symptoms; the diuretic action was especially marked. The dosage was 15 drops of the solution (= 0.2 mg. folinerin = 240 frog doses) three times daily in moderate and severe cases. After 8–10 days, further dosage was unnecessary or could be reduced. Rectal administration of suppositories containing 0.2 mg. of the glucoside were as effective; about 20 were given in the course of 8–14 days. The rapidity of the action (in 7 cases within 24–36 hours; usually 5–6 days) and the effectiveness of the oral or rectal routes make intravenous injection unnecessary. Folinerin exhibited the complete effect of digitalis in its action on disturbances in the production and conduction of cardiac activity. No unpleasant side-reactions or cumulation symptoms were observed after the usual 8–20 days or chronic treatment. The action was not only complete, but prolonged. Folinerin is important as a cardiac remedy because it is a chemically uniform, pure glucoside independent

of any standardization methods and shows constant activity. It is highly recommended for general practice. The present study involved 80 cases of which only five proved refractory.—R. SCHWAB. *Klin. Wochschr.*, 14 (1935), 564; through *Squibb Abstr. Bull.*, 8 (1935), A-764.

Gastro-Sil—Use of, in Nervous Hyperacidity. A neutral insoluble calcium silicate, administered in doses of one teaspoonful three times a day in warm water at meal time for the treatment of nervous hyperacidity.—FELIX OEFELEIN. *Deut. Med. Wochschr.*, 61 (1935), 597–598. (H. R.)

Heart Lesions—Therapeutics of Non-Decompensated. The fact that digitalis is not specific for all heart lesions is stressed. Citations of the literature and the author's own opinions concerning indications and contra-indications of digitalis in various cardiac diseases are presented. Quinine and quinidine are reviewed as to their value in heart therapy. The efficacy of a circulation hormone, sugar therapy with admixture of cardiac glucosides, and calcium in cardiac lesions is discussed. Treatment of syphilitic heart lesions and affections of blood vessels are also discussed.—P. MORAWITZ. *Deut. Med. Wochschr.*, 61 (1935), 1–4, 45–48. (H. R.)

Hypotensive Hormone. Cause of Protein Shock. The hormone, lymphoganglin, isolated from the lymph glands induces all the actions of protein shock. Due to this fact it is thought to be the etiological factor in this condition. Where protein therapy is unsuccessful due to an impaired lymphatic system, it is advised that this hormone be used.—G. DE NITO. *Deut. Med. Wochschr.*, 61 (1935), 339–341. (H. R.)

Liver Extracts—Characteristics and Therapeutic Use of, Treatment of Anemias of Bacillary Origin. A review abstracted from the literature.—LUCAS F. DEFELICE. *Semana méd.* (*Buenos Aires*), 42 (1935), 1086. (A. E. M.)

Lubrokal—Clinical Investigations of. Very effective in treatment of nervous headaches, general nervousness, chorea minor, psychic-depressive states, insomnia, nervous types of heart and respiratory disturbances, etc. Obtained in tablet form containing 0.6 Gm. bromine as ionized potassium bromide and 0.04 Gm. sodium ethylphenylbarbituric acid in each tablet.—ANTON SCHUMACHER. *Deut. Med. Wochschr.*, 61 (1935), 378–379. (H. R.)

Lymphatic Leukaemia—Treatment of. The effect of Lugol's iodine solution in chronic lymphatic leukaemia has been investigated. A definite reduction in the white cell count was seen in two out of five cases. The administration of iodine produced no noticeable symptomatic relief. Even in favorable cases the effect of iodine is small compared with that of X-ray therapy; the latter remains the best treatment at present available for chronic lymphatic leukaemia. The nature of the effects of iodine seems to suggest that it acts on the leucocytes themselves rather than on the leukaemic process. The bearing of these results and those of previous writers on the aetiology of leukaemia, especially its relation to hyperthyroidism, is discussed.—M. C. G. ISNAËLS. *Brit. Med. J.*, 1 (1935), 1021. (W. H. H.)

Mandelic Acid—Value of, in Urinary Infections. An attempt to discover a therapeutic agent that might replace the ketogenic diet in the treatment of urinary infections has led to the clinical trial of mandelic acid. Mandelic acid appears to be effective in cases of urinary infection unassociated with urinary obstruction, and it is hoped that a more wide-spread trial of the acid may confirm the work previously given.—M. L. ROSENHEIM. *Lancet*, 228 (1935), 1032. (W. H. H.)

Methylene Blue—Treatment of Wound Diphtheria by. E. Melchoir (*Zentrabl. f. Chir.* (March 2, 1935), 481) states that diphtheria, as a secondary and non-malignant complication of surgical wounds, became comparatively frequent in certain parts of Germany from 1919 to 1925; it then seemed to disappear, but Melchoir of late has seen it somewhat more often. An indolent wound results either with a characteristically "greasy" appearance or with recurrent formation of membrane. Intact granulation tissue forms an impassable barrier against diphtheritic, as also against tetanus and typhoid toxins, and treatment by parenteral antitoxin injections in these non-toxic cases is usually fruitless. The inefficiency of local antiseptic treatment in wound diphtheria has been widely recognized. Melchoir publishes a further recommendation of the treatment which he has found more effective—namely, application of powdered methylene blue. This quickly penetrates granulation tissue and leads within twenty-four hours to blue coloration of the urine; it has been found to be followed within seven to fourteen days by the disappearance of diphtheria bacilla. The application should be pursued for one or two weeks. Melchoir has also found it successful in nasal diphtheria and cutaneous diphtheria.—*Brit. Med. J.*, 1 (1935), 1204A. (W. H. H.)

Novophyllin—Clinical Experience with. Novophyllin (theophyllin-phenyl-ethyl barbituric acid-ethylene diamine) is a cardiac tonic and diuretic. It is not limited to oral use but can be used rectally, intravenously and intramuscularly.—W. SOMMER. *Deut. Med. Wochschr.*, 61 (1935), 633–635. (H. R.)

Orthosichol. Clinical Investigations of a New Preparation from Koemis Koetjing, the Indian Kidney Tea. Orthosichol, a preparation from the Indian drug Koemis Koetjing, and also found in *Orthosiphon stamineus* Benth., has been proved an effective agent in the treatment of diseases of the biliary apparatus. Besides promoting diuresis, it markedly increases the secretion and expulsion of bile. At the same time, it enhances the secretion and glycogen storage in the hepatic-biliary region. An analgesic and anti-inflammatory action is displayed in infectious biliary tract diseases. The average dose of orthosichol is 25 drops 3 times a day *per os;* severe cases require 2–3 cc. intravenously each day.—HELLMUT RUTENBECK. *Deut. Med. Wochschr.*, 61 (1935), 377–378. (H. R.)

Pernicious Anemia—Liver and Drug Therapy in. Until recently, arsenic has been the chief element used to combat the disease. Many forms of arsenic have been used. It is now generally conceded that if arsenic did produce an improvement, it was due to its destructive action on the liver, with the liberation of the specific antianemic principle. The idea of diet as a curative agent is not a new one, but usually the diet prescribed was non-nitrogenous and chosen rather for the dyspepsia and for the atrophic condition of the stomach than for any specific effect on the blood. The following conclusions were drawn: (1) There is a definite and stable antianemic principle ready formed and stored in liver. (2) There is, in normal gastric secretion, an intrinsic factor, capable of producing this antianemic principle by interaction with beef and other muscular tissues. (3) This intrinsic factor is not hydrochloric acid or pepsin. (4) There is in beef and other muscular tissues, which are not themselves antianemic, an extrinsic factor, capable of reaction with the intrinsic factor of stomach to produce the antianemic principle. (5) The activity of hog stomach is due to the interaction between the mucosal intrinsic factor and the extrinsic factor found in the muscle coat. (6) The antianemic principle is readily synthesized within the body from ordinary foods in normal gastric conditions, but the absence of the intrinsic factor in the gastric mucosa determines the onset of pernicious anemia.—B. L. STANTON. *Australasian J. Pharm.*, 16 (1935), 165. (T. G. W.)

Pernocton—Value of, in Basal Narcosis. Basal narcosis has been produced in 230 cases with Pernocton (5-β-bromallyl-5-sec. butyl barbituric acid) with and without the addition of ether. Advantages and disadvantages have been noted.—HELMUTH GREGER. *Deut. Med. Wochschr.*, 61 (1935), 170–173. (H. R.)

Potassium Bismuth Tartrate—Oral Administration of, in Syphilis. J. A. Kolmer (*Arch. Derm. Syph.* (Jan. 1935), 9) draws attention to the value of administering bismuth by mouth in syphilis. It is not suggested that this should replace the more effective intramuscular bismuth medication, but that it is of use in the following instances: (1) as a follow up in between the courses of injections of N. A. B. or bismuth, or when the patient is unavoidably prevented from taking injections for a short period; (2) as a method of starting treatment in chronic syphilis, particularly cardiovascular syphilis; and (3) for occasional use by patients who are traveling or who cannot tolerate injections. The preparation recommended is water-soluble potassium bismuth tartrate which is of high spirocheticidal value and low toxicity. The dose for adults is 2 to 3 grains in a capsule three times a day.—ANON. *Brit. Med. J.*, 1 (1935), 73. (W. H. H.)

Prominalettes—Use of, as Sedative. Tablets containing 0.03 Gm. Prominal (5-ethyl-1-methyl-5-phenyl-barbituric acid) have been successfully used as a sedative in 60 cases including *Enuresis nocturna*, nervous insomnia, climacteric disturbances, nervousness, hyperthyroidism, etc.—PAUL PLAUT. *Deut. Med. Wochschr.*, 61 (1935), 175. (H. R.)

Prontosil—Use of, in Puerperal Fever. It is recommended that every type of puerperal fever be treated with intravenous injections (20 cc. 1–2 times daily) of 0.25% solution of the hydrochloride of 4-(2′,4′-diaminophenylazo)-benzenesulfonamide (Prontosil), supplemented by oral treatment with 0.3 Gm. tablets. The red crystalline powder which dissolved to an orange-red liquid can also be administered subcutaneously. It was successfully used in 2 cases of streptococcal, 2 staphylococcal, several of streptococcal-staphylococcal and 13 undiagnosed puerperal fevers.—EUGEN ANSELM. *Deut. Med. Wochschr.*, 61 (1935), 264–265. (H. R.)

Prontosil—Use of, in Streptococcal Infections. Prontosil, 4-(2′,4′-diaminophenylazo)-

benzenesulfonamide-HCl, is recommended in 1–2 daily intravenous injections of 10–20 cc. of a 0.25% solution or 3 doses of 0.3–0.6 Gm. perorally in all severe forms of streptococcal angina and its complications, erysipelas, the initial stages of Sepsis lenta, in progressive and severe endocarditis lenta where *Streptococcus viridans* has been identified and in certain forms of infectious polyarthritis. The dye is claimed to be non-toxic and well tolerated. Only rarely were gastric pains and vomiting observed after oral doses. Intravenously there were no unpleasant symptoms. Circulation, respiration, blood pressure, pulse frequency, intestine and urine remained unaffected. —PH. KLEE and H. RÖMER. *Deut. Med. Wochschr.*, 61 (1935), 253–255. (H. R.)

Pyramidon Therapy—Side Reactions of. Explanations and problems of Pyramidon therapy and toxic reactions are presented.—LOTZE. *Med. Klin.* (1934), through *Deut. Med. Wochschr.*, 61 (1935), 319. (H. R.)

Quinidine and Strychnine—Use of, in Treatment of Premature Contractions. A case history is given in which, of the various treatments used, quinidine sulphate (gr. iii) and strychnine (gr. 1/60) thrice daily gave the greatest freedom from extrasystoles and from the accompanying symptoms and improved the compensation. Sixteen of 20 other patients with mild cardiac decompensation due to extrasystoles showed a similar favorable response with a combination of quinidine and strychnine. Possibly the chief factor in preventing the more wide-spread use of quinidine is the number of warnings, considerably overemphasized, of its dangers.—J. BAILEY CARTER and EUGENE F. TRAUT. *Am. J. Med. Sci.*, 189 (1935), 206; through *Squibb Abstract Bull.*, 8 (1935), A-551.

Quinine—Therapy of Respiratory Diseases by. Quinine in the form of Solvochin (25% aqueous quinine solution in slightly alkaline medium) and Transpulmin (camphor oil solution of quinine) is very effective when injected intragluteally in chronic diseases of the respiratory organ.—B. THOMS. *Münch. med. Wochschr.*, 82 (1935), 420; through *Squibb Abstr. Bull.*, 8 (1935), A-597.

"Sea Sickness Remedy Bayer." A discussion of its use in sea sickness.—CARL-LUDWIG to SCHMIDT. *Deut. Med. Wochschr.*, 61 (1935), 798–799. (H. R.)

Silver Manganite Preparations—Use of, in Dermatology. Silver manganite in admixture with an ointment base made from vaseline and ground nut oil and buffered to p_H 5.4, has been found to have a healing effect on leg ulcers, wounds of all types, dyshidrotic eczema and impetigo contagiosa. A preparation containing silver manganite, benzoin tincture and ether gave a good bactericidal effect in cases of impetigo contagiosa, folliculitides, moist and impetiginous eczema and all forms of intertriginous eczema and produced rapid drying of the affected parts so that growth of bacteria and fungi was stopped.—A. PILLOKAT. *Münch. med. Wochschr.*, 82 (1935), 540; through *Squibb Abstract Bull.*, 8 (1935), A-554.

Specialties and Products of Research in 1934. A review of the progress in hypnotics, therapy of snake bite by serums, treatment of cancer, hormones, vitamins, enzymes, new specialties, oligodynamics of silver, discovery of new elements, and heavy water, new apparatus and experimental methods.—K. SCHULZE. *Apoth. Ztg.*, 50 (1935), 207–211, 227–231. (H. M. B.)

Strophanthin—Treatment of Angina Pectoris by. Strophanthin was used with good results in 66 cases of angina pectoris in doses of 0.2–0.4 mg. given daily for three days followed by one day's interval. Several cases required larger doses.—H. ZIMMERMAN. *Münch. med. Wochschr.*, 82 (1935), 286; through. *Squibb Abstract Bull.*, 8 (1935), A-599.

Sulfarsenol in Erysipelas. P. Barre (These de Paris, 1935, No. 57) reports thirty-four cases in patients aged from 18 months to 78 years, fifteen of which were mild, twelve severe and seven very severe. Arsenical treatment may be administered by subcutaneous, intramuscular or intravenous routes. The dosage depends on the age of the patient, the state of his liver, kidneys and heart, and the severity of the attack. Usually the dose for adults is 12 cg., which may be increased by 6 cg. daily, while that for the child is 0.5 cg. per kilo. of body weight. The average number of injections required is about two. As a rule they should be given every two days, except in severe cases where more energetic treatment is necessary.—*Brit. Med. J.*, 1 (1935), 1060B. (W. H. H.)

Syphilis and Malaria—Investigations in Combating. A review.—B. HEINZ. *Pharm. Monatsh.*, 16 (1935), 41–45. (H. M. B.)

Urea—Value of, as a Diuretic. "Ituran" (effervescent urea tablets), intravenous injections of a 40% aqueous urea solution, and intravenous, intraperitoneal or intrapleural injections of

Salyrgan with urea have a very good diuretic action in heart muscle diseases and are without secondary manifestations.—K. WEESE. M.m.W., Nr. 48; through *Deut. Med. Wochschr.*, 61 (1935), 35. (H. R.)

Vitamin D—Absorption of, through the Skin. The author has shown that rickets may be cured in rats after 8 days by rubbing irradiated ergosterol into the skin. A solution of the vitamin was made in olive oil. A dose of 5x international vitamin D units was not satisfactory, however a dose of 10 units gave results. The result was determined by the "line test."—M. E. FODOR. *Zeitschr. f. Vitaminforschung* (1934), 241; through *Pharm. Weekblad*, 72 (1935), 697. (E. H. W.)

NEW REMEDIES

SPECIALTIES

Abüsan Capsules (Büsano Laboratories), an analgesic in the treatment of migraine and rheumatism, contains the diethylbarbiturate of dimethylaminophenyldimethylpyrazolon with caffeine citrate in equimolecular amounts besides saponin.—*Pharm. Monatsh.*, 16 (1935), 50. (H. M. B.)

Aderol (Kynazon-Werk, Frankfurt) is an external alcoholic preparation containing *d*-bornyl acetate (1%), an isothiocyanic ester (0.5%), camphor (5%) and ethereal oil (17%) used in the treatment of whooping cough, bronchitis and pneumonias of infants and older children.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Alloton (Riedel- de Haen, Berlin) is a chemical combination of garlic oil (12%) and dioxycholic acid. Each coated pill contains the active constituent of 1 Gm. fresh garlic. It is used in digestive disorders, worms, climacteric changes and arteriosclerosis.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Anox (Schering-Kahlbaum A.G.) is a grain weevil preparation which is used as a spray (1:10) to purify and disinfect granaries.—*Pharm. Monatsh.*, 16 (1935), 97. (H. M. B.)

Antigihda (Breit and Co., Hamburg), a liniment for rheumatism, is a yellow solution of hexamethylenetetramine and salicylic acid perfumed with oil of mirbane yielding a residue upon evaporation of about 20%.—*Apoth. Ztg.*, 50 (1935), 253. (H. M. B.)

Apicosan N (Dr. A. Wolf, Bielefeld) is a special form of the bee poison preparation Apicosan and is used to combat neuritis, etc.—*Pharm. Monatsh.*, 16 (1935), 8. (H. M. B.)

Arojecol (Schwanen-Apotheke, Mainz) is a constructive tonic for children and adults containing cod liver oil, chalk, sodium ammonium phosphate with the addition of Recresal.—*Pharm. Monatsh.*, 16 (1935), 8. (H. M. B.)

Askaridol Dragees (Bayer) consists of the active constituents of oil of chenopodium (50%) in 4-beta-diethyl-amino-ethoxyolyl-anilid benzoate in packages of 20 dragees equivalent to 0.015 Gm. ascaridol.—*Pharm. Post*, 68 (1935), 210. (H. M. B.)

Baldronit (Otto Reichel, Fabrik pharm. und biol. Erzeugnisse, Berlin-Neukölln) is an alcoholic preparation of the root of *Valeriana montana* and of adonis herb to which is added ethylallylmalonylurea-amidopyrine (12.5%). It is used as a sedative and nervine for heart neuroses, epilepsy, insomnia and hypertonia.—*Pharm. Zentralh.*, 76 (1935), 291. (E. V. S.)

Baldronit cum Nitro (Otto Reichel) contains 0.5 Gm. of a 1% nitroglycerin per 100 Gm. of Baldronit. It is indicated for coronary sclerosis, angina pectoris and stenocardia.—*Pharm. Zentralh.*, 76 (1935), 291. (E. V. S.)

Bevitone (Merck and Co.) is a highly concentrated preparation of Vitamin B from wheat germ and rice bran. Each fluidounce represents approximately 2000 Chase-Sherman units.—*Drug and Cosmetic Ind.*, 36 (1935), 773. (H. M. B.)

Bickmorin (Bickmorin, Gall Kure & Cy, Old Town, Me.) for sores and injuries of all sorts of horses and cattle consists of 33% vaseline, 31.5% saponifiable fats (hog fat?), 1.5% water, 17.5% sulphur, 2.5% indigo, 6% boric acid and 8% alum.—*Pharm. Monatsh.*, 16 (1935), 97. (H. M. B.)

Bisteril Bacilli (Fabrik Dr. Wander. Ges. m. b. H., Vienna), in packages of 10, consists of Pyraligin (ortho-oxyquinoline sulpho-salicylate), hexamethylenetetramine hydrochloride, sodium bicarbonate.—*Pharm. Post*, 68 (1935), 213. (H. M. B.)

Blimal (Lab. de Pharm. Med., Paris) is a solution of hexamethylenediamine iodomethylate,

dimethylene-diamine salicylate and papaverine hydrochloride in ampuls for rheumatic affections.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Brocanal (Curta & Co., G. m. b. H. Berlin) is marketed in tablets containing 0.025 Gm. phenylethylbarbituric acid, 0.4 Gm. bromcalcium diethanolamine (= 0.15 Gm. bromine and 0.037 Gm. calcium) and 0.015 Gm. caffeine and is indicated in epilepsies, mental disturbances, depression and climacteric disorders.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Calmural is an ointment containing brominated uranium oxide (9% uranium; 7—bromine) to relieve itching.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Chinoform Powder (Chinosolfabrik A. G., Hamburg) consists of potassium ortho-oxyquinoline bisulphate (10%) with starch and talc and administered in doses of 25 and 100 Gm.—*Pharm. Post*, 68 (1935), 210. (H. M. B.)

Chinoral Dragees (Chinosolfabrik A. G., Hamburg) contains 0.10 Gm. ortho-oxyquinoline with a binding agent.—*Pharm. Post*, 68 (1935), 210. (H. M. B.)

Cibalgin Tablets (Chem. Industries, Basel) consists of 0.22 Gm. dimethylamino-phenyl-dimethyl-pyrazolon and 0.03 Gm. diallyl-barbituric acid.—*Pharm. Monatsh.*, 16 (1935), 52. (H. M. B.)

Citrofinal (Chem.-pharm. A.-G. Bad Homburg) is the new name for the sodium chloride free diet- and table-salt **Citrovin.**—*Pharm. Zentralh.*, 76 (1935), 292. (E. V. S.)

Cluexin (Löwen- Apotheke, Dresden) for insect bites is a yellow salve in tubes consisting of suprarenin, ethyl para-amido benzoic acid, menthol and volatile oil.—*Pharm. Monatsh.*, 16 (1935), 97. (H. M. B.)

Collumol (Dr. Blajet) is a colloidal peptic aluminum hydroxide employed in stomach affections, in hyperacidity and in abnormal fermentation.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Cophenin Tablets (Pharm. Laboratorium, Gleiwitz O.-S.) contain in each tablet caffeine (0.08 Gm.), phenacetin (0.22 Gm.), cinchona bark (0.05 Gm.), and a series of effective homeopathic doses of antipyretics. It is used as an analgesic, antineuralgic and antipyretic.—*Pharm. Zentralh.*, 76 (1935), 338. (E. V. S.)

Corcumen (Temmler Works, Berlin) is distributed as capsules containing 0.1 Gm. curcumine-sodium and 0.1 Gm. calcium chlorate and ampuls containing 5.5 cc. of a 5% solution and are employed in liver and gall bladder diseases.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Cortidyn (Chemische Fabrik Promonta, Hamburg 26) is a standardized extract of the suprarenal cortex. The activity and uniformity of the preparation are controlled by biological tests on mice. It is indicated in Addison's disease, muscle dystrophy, hypogenitalism, and other disturbances of the internal secretions. It is used intramuscularly or subcutaneously in daily doses of from 0.5 to 2 cc. and is marketed in packages containing 3 and 10 ampuls of 1.1 cc. each.—*Pharm. Ztg.*, 80 (1935), 431. (G. E. C.)

Crinol Salve (Chem. Fabrik Gebeka, Dresden), a salve for burns, consists of boric and salicylic acids, of each 0.2 Gm., balsam peru 0.4 Gm., liquid petrolatum 4.2 Gm., yellow wax 5.5 Gm., Venetian turpentine 17 Gm., egg yolk 2 Gm., Xeroform 0.2 Gm. and anthrasol 0.3 Gm.—*Pharm. Monatsh.*, 16 (1935), 97. (H. M. B.)

Danamine ("Syntetic," Grindstedvaerket, Denmark) identical to *Coramine* is 3-pyridine-carbonic acid and is employed to replace by injection of the 25% solution as a cardiac tonic and in carbon monoxide poisoning.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Danarsine is the calcium salt of allylarsenious acid, $C_3H_5AsO_3Ca$, H_2O, and has the same composition as *Arsyleen*.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Disperts (Dispert, Ltd., The Hague) are preparations prepared by the dispert method of Krause whereby the liquid extract from plant parts is finely subdivided and sprayed over a surface, being dried in the process. The following disperts are prepared: *Aconite-Dispert* is made up into tablets equivalent to 0.05 or 0.2 mg. per tablet and is employed in neuralgia and migraine. *Aluminum Acetate-Dispert* is powdered aluminum acetate. *Belladonna-Dispert* is belladonna extract free from inert substances and containing only the active constituents of belladonna. It is sold as the powder, tablets, suppositories and solution. The powder is standardized to an atropine content of 1.5% (biologically); each tablet contains 0.25 mg. atropine and each suppository 0.3 mg. *Colchicum-Dispert* is an extract from colchicum seeds standardized as to colchicine content

and is sold in capsules for rheumatism. *Digitalis-Dispert* is a cold water extract of digitalis leaf biologically assayed and sold as a powder, tablets, solution and suppositories. *Frangula-Dispert* is an extract from frangula in tablet form containing in each tablet 25 mg. emodin. *Pancreas-Dispert* is made from pancreas and is also available as an ointment and a plaster used as an aid to digestion. The tablets have a lipase value of 0.25 and the powder a value of 0.35. *Secale-Dispert* is an extract of ergot as suppositories standardized to contain in each 1 mg. of alkaloids. *Thyreoid-Dispert* consists of the dry powder of standardized thyroid gland. *Valerian-Dispert* from the root of valerian is physiologically standardized on mice and is sold as capsules.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Dolorfug-Balsam (Dr. W. Dernbach, Apotheker, Bad Salzschirf) is a yellowish ointment containing camphor, methyl salicylate, chloroform and menthol. It is used for rheumatism, ischias and lumbago.—*Pharm. Zentralh.*, 76 (1935), 353. (E. V. S.)

Dolorfug Capsules (Dernbach), a nerve pain, migraine and neuralgia remedy, contain dimethylaminopyrazolon, phenacetin, phenazone, magnesium oxide and caffeine.—*Pharm. Zentralh.*, 76 (1935), 353. (E. V. S.)

Doryl Solution (Merck) in packages of 3 and 10 ampuls contains in each ampul 0.00025 Gm. doryl (addition of trimethylamine to carbaminic acid-beta-chlorethyl ester).—*Pharm. Post*, 68 (1935), 213. (H. M. B.)

Dossalax (Apogepha, Fabrik chem.-pharm. Präparate Dr. Starke & Max Biering G. m. b. H., Dresden), a pill for chronic constipation, contains aloe, ext. rhubarb comp., and *Ipomœa turpethum* resin.—*Pharm. Zentralh.*, 76 (1935), 338. (E. V. S.)

Drei-Nerv-Würrfel (Dr. H. Much A.G. Che. Pharm. Fabrik, Berlin-Pankow) a biological nerve builder in tablet form (3.1 Gm.) consists chiefly of lecithin, albumin, sugar, grain embryo meal, organic iron and calcium salts.—*Apoth. Ztg.*, 50 (1935), 253. (H. M. B.)

Ergostabil (Oest. Heilmittelstelle G. m. b. H.), in ampuls, contains stabilized extract of ergot and 0.5% benzoic acid.—*Pharm. Post*, 68 (1935), 212. (H. M. B.)

Eunarcon (J. D. Riedel-E. de Haen A. G., Berlin) is a 10% stabilized aqueous solution of the sodium salt of isopropyl-beta-bromallyl-*N*-methylmalonyl-urea suitable for intravenous injection used as a narcotic in simple surgeries and in gynecology similar to ethyl chloride or as a full narcotic in short operations.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Europan Tablets (F. J. Kwizda, Korneuburg) is marketed in packages of 10 and 20 tablets. Each tablet consists of 0.26 Gm. phenyl dimethyl-aminopyrazolon, 0.0112 Gm. diethylbarbituric acid, phenylethyl barbituric acid and magnesium peroxide.—*Pharm. Post*, 68 (1935), 213. (H. M. B.)

Ezoidon Pine Needle Tablets (H. Edelmann, Berlin) consists of sodium chloride colored with fluorescein and about 1% volatile oil.—*Pharm. Monatsh.*, 16 (1935), 9. (H. M. B.)

Ezoidon-Sulphur Bath (H. Edelmann, Berlin) is used for the treatment of skin disorders, furunculosis, itches, eruptions, etc., and consists of soda 82 Gm., pine oil about 3 Gm. The sulphur is in the precipitated form.—*Pharm. Monatsh.*, 16 (1935), 9. (H. M. B.)

Floraform (Oemata, Chem. Works, Berlin) a deodorant and disinfectant, is a soap solution of formaldehyde (0.05–1%).—*Pharm. Monatsh.*, 16 (1935), 98. (H. M. B.)

Floraform-Cream (Oemeta Chem. Works G. m. b. H., Berlin) is a formaldehyde skin cream used to combat excessive perspiration and is a deodorant.—*Pharm. Monatsh.*, 16 (1935), 98. (H. M. B.)

Gallicetan Dragees (S. Neumeier, Frankfurt) contains 0.25 Gm. dried and powdered black radish, 0.05 Gm. sodium glycocholate and 0.05 Gm. menthol and is used for liver and gall bladder disorders.—*Pharm. Monatsh.*, 16 (1935), 98. (H. M. B.)

Germicid Cachets and Tablets consist of 0.50 Gm. of Germicid which is dimethylamino dimethyl-oxyquinizin and 33% oxyquinoline sulphonic acid.—*Pharm. Post*, 68 (1935), 213. (H. M. B.)

Glykhepar (Nordmarke Werke, Hamburg) used for primary muscle atrophy, myasthenia gravis pseudoparalytica, myelosis, infantile paralysis, etc., is Hepatrat with 20% glycocol in liquid and granular form. Dose: Liquid—1 tablespoonful 3 times a day; granules—2 heaping teaspoonfuls three times a day.—*Pharm. Monatsh.*, 16 (1935), 98. (H. M. B.)

Hucomin Tablets (Humin-Chemie G. m. b. H, Munich-Pasing) used to combat rheumatism, gout, etc., consist of almost crystallizable huminic acid compounds coupled with hexa-

methylenetetramine, methylamine, carbamide. They are water-soluble and neutral in reaction. For the estimation of the pharmacodynamic effect the crystalloidal colloidal character of the huminic acid compounds is important, their specific bactericidal properties as well as their reducing and amidate action depends on the splitting up of the nucleic acids. They are resorbable and reduce purinamidases and xanthine oxidases as well as uric acid itself with the formation of water-soluble complex compounds.—*Pharm. Monatsh.*, 16 (1935), 99. (H. M. B.)

Humaven (Pharmazeutische Handelsgesellschaft m. b. H., Dusseldorf), a nerve sedative, is prepared from the raw sap of freshly germinated oats, the chlorophyll of spinach and fluid-extracts of hops, valerian and Piscidia bark.—*Pharm. Zentralh.*, 76 (1935), 105. (E. V. S.)

Idracafin (Chem. Fabrik J. D. Riedel A.-G., Berlin) is a tablet containing 0.5 Gm. of Idragin (acetylsalicylic acid Riedel) and 0.05 Gm. of caffeine. It is used for headache, migraine, toothache, rheumatism, ischias, grippe, etc.—*Pharm. Zentralh.*, 76 (1935), 292. (E. V. S.)

Igeneu (Chem. Pharm. Laboratorium Eduard Lyss, Dresden) is a solution of phenyldimethylisopyrazolon in water treated by silver catalysis with addition of desirable anesthetics. It is injected under the skin for neuralgia, neuritis, etc.—*Pharm. Monatsh.*, 16 (1935), 99. (H. M. B.)

Inolène (Lacombe, Paris) is a coal-tar antiseptic containing essence of anise seed 2 Gm., essence of star anise 1 Gm., saccharin 0.2 Gm., tincture of quillaja impregnated with coal-tar enough to make 100 Gm.—*Bull. Ch. Synd. Pharm. Seine* (Feb. 1935); through *J. pharm. Belg.*, 17 (1935), 404. (S. W. G.)

Iodéopirine (E. Viel et Cie, 37, Avenue de l'Opéra, Paris) is marketed in the form of tablets, each containing 0.05 Gm. of acetyl-iodo-salicylic acid, and as an ointment containing 1 Gm. of acetyl-iodo-salicylic acid for each 24 Gm. of excipient. The tablets are recommended in the following doses: 2 tablets 3 times a day for acute rheumatism and sciatica; 3 to 6 tablets (in 3 or 6 doses) every 24 hours for chronic rheumatism and other infections; 1 tablet with a hot drink at night for preventive treatment for grippe. (S. W. G.)

Iodopeptone Cody (Gourdal, to Brive—Corrèze) is a solution of citrated iodopeptone containing iodinated peptone (10%) 50 Gm., sodium citrate 20 Gm., distilled water enough to make 100 cc.—*Bull. Ch. Synd. Pharm. Seine* (Feb. 1935); through *J. pharm. Belg.*, 17 (1935), 404. (S. W. G.)

Katadyn-Silver (Schering-Kahlbaum A.-G., Berlin) is a catalytic oligodynamic silver preparation containing 10% of silver and prepared from a 99.99% silver refined with a special surface structure from a fine capillary ceramic powder. It is used locally to sterilize infections of the mucous membranes and to disinfect wounds, also by oral administration for various infectious diseases such as duodenal ulcers, dysenteries, diarrheas, etc.—*Pharm. Zentralh.*, 76 (1935), 105. (E. V. S.)

Lygal (Dr. G. Henning Chem. and Pharm. Fabrik, Berlin-Tempelhof) is a gout remedy containing 50% calcium phenylquinoline carbonate, 29% dimethyl-aminophenazon and 21% caffeine sodio-salicylate. It is marketed as dragees containing 0.3 Gm., as tablets of 0.75 Gm. and as a 30% solution in ampuls. The latter two contain the soluble sodium compound instead of the calcium salt.—*Pharm. Monatsh.*, 16 (1935), 54. (H. M. B.)

Métricure (Antoine, Paris) is a vaginal antiseptic containing trioxymethylene 0.1 Gm., essence of lavender 0.1 Gm., essence of geranium 0.1 Gm., tannin 2 Gm., sodium tetraborate 40 Gm. and sodium bicarbonate 57.7 Gm. One teaspoonful should be dissolved in enough water to make 2 liters.—*Bull. Ch. Synd. Pharm. Seine* (Feb. 1935); through *J. pharm. Belg.*, 17 (1935), 404. (S. W. G.)

Mingol-Extra (H. von Gimborn A.-G., Emmerich a. Rh.), a cough, croup and catarrh tablet, is prepared from oils of peppermint, anise and fennel, ammonium carbonate, formaldehyde, glycyrrhiza, sucrose and potato starch.—*Pharm. Zentralh.*, 76 (1935), 338. (E. V. S.)

Mucitekt Tablets (Nordmark-Werke G. m. b. H., Hamburg 21) contain a mixture of mucin-plant proteins and the acid-binding protein constituents of blood. The proteins have a high acid-combining power without exciting the gastric juices. The preparation has the property of coating the stomach walls to prevent the injurious actions due to food friction and gastric juices. The tablets are taken for hyperacidity, ventricular and duodenal ulcers, and gastritis.—*Pharm. Zentralh.*, 76 (1935), 338. (E. V. S.)

Myrrhatan (Labora-Verlag, Berlin), a preparation for tooth and mouth care against para-

denitis, gum bleeding, etc., is prepared from tinctures of myrrh, rhatany and nutgall, oils of peppermint, salvia and eucalyptus and other ethereal oils of suitable flavor.—*Pharm. Zentralh.*, 76 (1935), 338. (E. V. S.)

Nemural (Bayer) is marketed in packages of 10 tablets each containing 0.018 Gm. arecoline 4-oxy-3-acetyl-amino-phenylarsenate.—*Pharm. Post*, 68 (1935), 210. (H. M. B.)

Neogel Acidulans (Apoth. A. Kremel, Vienna) is sold in packages of 6 small pills and consists of sulphosalicylic, acetic and lactic acids, gelatin, cocoa butter and perfume.—*Pharm. Post*, 68 (1935), 210. (H. M. B.)

Neogel Antifluoric (Apoth. A. Kremel, Vienna) is marketed in packages of six pills consisting of sodium acetylarsenylate, strontium formate, sugar, dextrin, colloidal copper and Neogel pill mass.—*Pharm. Post*, 68 (1935), 210. (H. M. B.)

Neogel Antigonorrhoic (Apoth. A. Kremel, Vienna), in packages of 6 pills, contains silver proteinate, Cehasol and pill mass.—*Pharm. Post*, 68 (1935), 211. (H. M. B.)

Neogel Resorbens (Apoth. A. Kremel, Vienna), in packages of 6 pills, consists of Cehasol, iodine, potassium iodide, chloral hydrate and pill mass.—*Pharm. Post*, 68 (1935), 211. (H. M. B.)

Neurobrom (Bombelon-Werk, Apotheker H. Woelke, Hamburg 20) are bouillon cubes containing in each 1.1 Gm. of sodium bromide, some sodium chloride, meat and plant extractives, condiments and some fat. One cube dissolved in a cup of hot water produces a suitable bouillon for epileptics, neurasthenics or neurotics.—*Pharm. Zentralh.*, 76 (1935), 338. (E. V. S.)

Optolax Tablets (Universitäts-Apotheke, E. Weber, vorm. Dr. Chr. Brunnengräber, Rostock i. Meckl.) is a cathartic used to prevent increase in weight and for gall troubles. The active ingredients are ext. aloe, ext. cascara, leptandrin and *Ipomœa turpethum* root.—*Pharm. Zentralh.*, 76 (1935), 338. (E. V. S.)

Pandigal is a heart remedy containing the glucoside lanadigin, (0.4 mg.) as drops and tablets; ampuls and suppositories are also made containing 0.2 mg.—*Pharm. Post*, 16 (1935), 74. (H. M. B.)

Penetal (Vial and Uhlmann, Frankfurt) is cyclopentenyl-ethyl barbituric acid as colorless prismatic crystals, melting at 163° C., difficultly soluble in cold water while its salts are easily soluble. In doses of 0.1–0.3 Gm. (1–3 tablets) it is reputed to be a hypnotic without side reactions.—*Pharm. Monatsh.*, 16 (1935), 74. (H. M. B.)

Poly-propeptan Dragees (Chemosan-Union, Vienna), in packages of 25, contain the peptones from apple, egg, pea, veal, potato, corn meal, milk, rice, beef, spinach, pork and wheat bran.—*Pharm. Post*, 68 (1935), 213. (H. M. B.)

Postalan-Haemorrhoidal-Suppositories (Fürstl. Fürstenberg. Hofapotheke R. Baur in Donaueschingen) contain ethyl *p*-aminobenzoate, resorcin, bismuth oxyiodogallate, zinc oxydate, balsam of peru and cocoa butter.—*Pharm. Zentralh.*, 76 (1935), 338. (E. V. S.)

Pyradial Tablets (Wiedenmann, Basel) contain 0.0336 Gm. diallyl-barbituric acid and 0.2129 Gm. dimethyl amido-antipyrine with corn-starch.—*Pharm. Monatsh.*, 16 (1935), 75. (H. M. B.)

Quinine Ethylphenylbarbiturate Compound (Palatin Apotheke, Debreczin) is a new form of hypnotic sedative.—*Pharm. Monatsh.*, 16 (1935), 8. (H. M. B.)

Reichelit-Hustentee (Otto Reichel, Berlin-Neukölln) is a cough remedy containing Ledum, althaea, *Tussilago farfara*, salvia, fennel, mint, galeopsis, glycyrrhiza, pimpinella, arnica, eucalyptus, grindelia and thyme. It is used for bronchial catarrh, asthma, grippe, hoarseness and whooping cough.—*Pharm. Zentralh.*, 76 (1935), 306. (E. V. S.)

Reichelit-Hustentropfen (Otto Reichel) is a liquid cough drop remedy prepared from a distillate of pimpinella, anise, arnica, salvia, eucalyptus, mint and glycyrrhiza, to which is added camphor (0.1%), benzoic acid (0.4%) and ephedrine (1%).—*Pharm. Zentralh.*, 76 (1935), 307. (E. V. S.)

Rheumavertan (Ernst Schumann, Fabrik chem. Praparate, Berlin-Neukölln), an antirheumatic, is a solution of a salicylic acid ester, a small percentage of ammonium phenylquinoline carbonate, camphor, menthol and an ethereal distillate of the pinene and terpene series in sulphurated oleic acid esters of plant oils.—*Pharm. Zentralh.*, 76 (1935), 227. (E. V. S.)

Rynarzol (Chem. Laboratorium Berlin-Norden G. m. b. H., Berlin), a nerve, anemia and

weakness remedy, contains calcium glycerophosphate, hemoglobin, vanillin, cocoa, sucrose and flour.—*Pharm. Zentralh.*, 76 (1935), 338. (E. V. S.)

Salzchlirfer Reducing Pills (Dr. W. Dernbach, Apotheker, Bad Salzschlirf), a cathartic and fat reducing pill, contains ext. rhubarb, ext. cinchona, ext. aloe, ext. cascara, sodium taurocholate, *Ipomoea tupethum* resin and Carlsbad Salts.—*Pharm. Zentralh.*, 76 (1935), 338. (E. V. S.)

Sanovin (Homoöpathische Centralapotheke, Prof. Dr. Mauch, Göppingen) is a homeopathic preparation containing fennel, plantago, drosera, *Castanea vesca*, anise, thyme, cratagus, stramonium, bryonia, ipecac, potassium sulphoguaiacolate and antimony arsenate. It is used for coughs and bronchial catarrh.—*Pharm. Zentralh.*, 76 (1935), 339. (E. V. S.)

Schachtox (F. Schacht, G. m. b. H., Braunschweig), which is marketed in two strengths, is a concentrated pyrethrum preparation. The first strength diluted 100–200 times is used for plant lice, while the second is used as a house, yard and stable spray for all vermin.—*Pharm. Zentralh.*, 76 (1935), 339. (E. V S.)

Scillergon Tablets (F. J. Kwizda, Korneuburg), in packages of 12, consist of the standardized active constituents of squill with pimpinella root.—*Pharm. Post*, 68 (1935), 213. (H. M. B.)

Scilloral (Asta A.-G., Chem. Fabrik, Brackwede i.W.) is a patented heart remedy prepared from squill and is marketed as cachets, suppositories and in liquid form.—*Pharm. Zentralh.*, 76 (1935), 307. (E. V. S.)

Sedocalcium occurs in the trade in the following combinations: Iodo-sedocalcium as tablets of 0.25 Gm. sedocalcium and 0.02 Gm. potassium iodide; Theobromine-sedocalcium: 0.025 Gm. sedocalcium and 0.2 Gm. theobromine; Iodo-sedocalcium-theobromine: 0.25 Gm. sedocalcium, 0.2 Gm. theobromine and 0.1 Gm. potassium iodide. These preparations are used for hypotonicity, arteriosclerosis and asthma.—*Pharm. Monatsh.*, 16 (1935), 76. (H. M. B.)

Sensibamine (Chem. Fabrik. Dr. Georg Henning, Berlin-Tempelhof) is a new ergot alkaloid. The increased uterus action due to the alkaloid occurs in 1–2 minutes after intravenous injection or in 10 minutes after subcutaneous injection. It is taken after childbirth to promote the return to normal of the uterus.—*Pharm. Zentralh.*, 76 (1935), 227. (E. V. S.)

Silikat-Hautsalbe (Chem. Fabrik Hygiea G. m. b. H., Dresden), an ointment of lanolin and silicic acid, is used for frost-bite, skin eruptions, pimples, red nose and face.—*Pharm. Zentralh.*, 76 (1935), 227. (E. V. S.)

Silikat-Milchpuder (Chem. Fabrik Hygiea G. m. b. H., Dresden), a dusting powder containing silicic acid in an easily absorbable form, is indicated for wind-burn, skin itch, wet eczema and inflammation.—*Pharm. Zentralh.*, 76 (1935), 227. (E. V. S.)

Solvarsin (I.G. Farben A. G.) contains 22.4% aqueous solution of 4-oxy-3-acetyl-amino phenylarsenic acid amino-ethanol in packages of five 2-, 3- and 5-cc. ampuls.—*Pharm. Post*, 68 (1935), 212. (H. M. B.)

Solvochin-Calcium-Ampullen (Chem.-pharm. A.-G., Bad Homburg) contains in each 5 cc. ampul 250 mg. of quinine corresponding to 1 cc. of Solvochin and 72 mg. of calcium as calcium glutaminate which is dissolved by means of phenyldimethylpyrazolon. The p_H of the liquid is 7.2. It is indicated for croup pneumococci-pneumonia, bronchial pneumonia, postoperative pneumonia and other conditions due to pneumococci.—*Pharm. Zentralh.*, 76 (1935), 307. (E. V. S.)

Stabal (Papatin Apothecary of Aba Sztankay v. Hermany, Debreczin) is compound quinine ethylphenylbarbiturate and contains ethylbarbituric acid 41.687%, quinine 56.376%, strychnine 1.936% in chemical combination. It is used as a hypnotic and sedative in doses of 0.05–0.15 Gm.; for epilepsy for children 0.01–0.02 Gm. three times a day, for adults in treatment of the same disorder 0.05 Gm. three times a day with a maximum dose 0.2 Gm. For severe insomnia 0.05 Gm. are given in morning and at noonday (or 1 pastille) and at evening if necessary 0.10–0.15 Gm. (2–3 pastilles). It is a bitter, insoluble white powder, easily soluble in alcohol, m. p. 181–182° C.—*Pharm. Monatsh.*, 16 (1935), 12. (H. M. B.)

Stovarsol Sodium (Société Parisienne d'Expansion Chimique Spezia, Paris) is the sodium salt of oxy-acetylamino-phenylarsinic acid in ampuls containing 0.50–1.0 Gm.—*Pharm. Post*, 68 (1935), 210. (H. M. B.)

Styptoplast (Firma Lohmann A.-G.) (formerly Lüscher & Bömper A.-G.) is the new name for **Clauden-Wundverband.**—*Pharm. Zentralh.*, 76 (1935), 339. (E. V. S.)

Toxursan (Chem. Fabrik Dr. Ch. Thaler, Wien) is a lithium-containing condensate of terpenes and unsaturated fatty acids. It is used as a local treatment for rheumatic and gouty maladies.—*Pharm. Zentralh.*, 76 (1935), 227. (E. V. S.)

Treupel Suppositories (Chem.-pharm. A.-G., Bad Homburg) contain in each suppository a 1-Gm. Treupel tablet, 0.5 Gm. of phenacetin, 0.25 Gm. of acetylsalicylic acid and 0.02 Gm. of codeine.—*Pharm. Zentralh.*, 76 (1935), 227. (E. V. S.)

Tussipebt Tablets (P. Beiersdorf and Co., Vienna), in packages of 32, contains aminobenzoic acid ester, menthol, anisol, primula saponin.—*Pharm. Post*, 68 (1935), 213. (H. M. B.)

Tutopon (Bayer) ampuls, suppositories, tablets and solution contain 1–2% total alkaloids of opium.—*Pharm. Post*, 68 (1935), 210. (H. M. B.)

Urginin (Calco Chemical Co.), formerly known as **Scillonin**, is a cardiac tonic derived from two of the active glucosides of squill and the clinical value of the product has been thoroughly demonstrated in the treatment of decompensations, cardiovascular renal disorders.—*Drug and Cosmetic Ind.*, 36 (1935), 775. (H. M. B.)

Uric Acid Cachets (Pharm. Handelsgesellschaft m. b. H., Dusseldorf) is a yellow-colored powder consisting of oxgall (as dry substance 50%), phenylquinoline carbonic acid 30%, hexamethylenetetramine 20%. It is used for rheumatism, gout, etc.—*Pharm. Monatsh.*, 16 (1935), 98. (H. M. B.)

Vermitrapp-Suppositories (Dr. Schmidsche Apotheke Inh. Otto Trapp, Tübingen), a vermifuge, containing iodoform, naphthalene, thymol and cocoa butter.—*Pharm. Zentralh.*, 76 (1935), 307. (E. V. S.)

Wolarin Tablets (Borussis-Apotheke, Ed. Patermann, Berlin-Schöneberg) contain in each tablet ext. valerian (5%), calcium carbonate (1%), quinine hydrochloride (0.5%), menthol (0.1%), phenacetin (25%) and acetylsalicylic acid (68.4%). It is used for influenza, rheumatism, gout, ischias, head and nerve pains.—*Pharm. Zentralh.*, 76 (1935), 339. (E. V. S.)

BACTERIOLOGY

Antipneumococcic Serum—A New Method of Titration of, by the Neutralization of the Antibodies in Vitro. Assay methods *in vivo* are inconvenient and lacking in precision. Methods *in vitro* for the assay of anti-toxic serums do not give a true measure of the therapeutic activity. References to these are cited. The principle of the new method is to find the maximum volume of serum which a known weight of dry antigen is able to deprive of its antibodies. A constant weight of pneumococcic antigen is placed in contact with varying volumes of serum. The presence of antibodies in the centrifuged liquid is detected by the addition of pneumococcic gum which causes precipitation. The method is given in detail. The authors hope to apply the method to those serums such as antistreptococcic, antimeningococcic and antigonococcic which are impossible or difficult to test with animals.—Louis Cotoni and Jacques Pochon. *Compt. rend.*, 200 (1935), 2039. (G. W. H.)

Disinfection—Fallacies and Dangers in Attempted Chemical. According to the author, iodoform is not a disinfectant at all. It can be added to bacterial cultures in quantity without in any way interfering with their growth; if it is placed in the bottom of a tube of broth, colonies of streptococci will grow on it. Mercurochrome is a grossly overrated substance which deceives by its color just as iodoform deceives by its smell. Results of experiments show that concentrations of mercurochrome necessary for bactericidal action are very much greater than those indicated by the original work of Young, whose results are vitiated by the fact that he made his test dilutions in acid urine. The following is a statement of the concentrations of mercurochrome which, according to different observers, will or will not kill *Staphylococcus aureus:*

Observer	Dilution	Conditions	Time of Exposure	Result
1	1:10,000	In urine	15 mins.	Killed
2	1:400	In blood	24 hours	Failed to kill
3	1:400	In broth	24 hours	Failed to kill
4	1:50	In water	10 mins.	Failed to kill
5	1:100	In water	15 mins.	Failed to kill

Among disinfectants most resistant to interference by organic matter are phenol and cresols, which are consequently well suited for disinfecting excreta, and flavine is one of the most reliable antiseptics for many surgical purposes. On the other hand, the emulsion of acriflavine (B. P. Codex 1934) is an example of the incorporation of a disinfectant in an unsuitable vehicle. This emulsion can be poured in quantity on to fluid culture media and left there indefinitely without interfering with bacterial growth. The emulsion is so constituted that none of the flavine diffuses into a watery medium in contact with it, unless the two are briskly shaken together in a corked tube. Most disinfectants are liable to cause subtle and invisible damage to the tissues if only by immobilizing leucocytes, but some destroy tissue to an extent which can be seen and felt. Among the latter we have principally to consider disinfectants of coal-tar origin. Phenol is the most caustic of all substances which have been used as disinfectants in medicine. The cresols are somewhat less toxic and rather more bactericidal. Some bacteria such as the tubercle bacillus and sporing bacteria, are more resistant than others to any disinfectant But apart from these special types, there is endless and wide variation in the susceptibility of different bacteria to the action of a single disinfectant: these variations are not the expression of a general vulnerability in the bacterial cell, since a micro-organism which is easily killed by one disinfectant may be almost indifferent to another. It is suggested that a weak solution of a disinfectant may stimulate bacterial growth, and this is particularly likely when disinfectants are injected intravenously in septicemia. If so, ineffective measures are not merely indifferent, they may be dangerous.—L. P. GARROD. *Pharm. J.*, 134 (1935), 323. (W. B. B.)

Mold Fermentations—Apparatus for the Application of Submerged, under Pressure. A new apparatus is described. It consists essentially of a revolving drum equipped with internal buckets and baffles and provided with means for the introduction and removal of air under pressure.—H. T. HERRICK, R. HELLBACH and O. E. MAY. *Ind. Eng. Chem.*, 27 (1935), 681. (E. G. V.)

4′-Sulfamido-2,4-diamino-azobenzene Hydrochloride—Curative and Preventative Action of, in Experimental Streptococcus Infection. Mice intraperitoneally infected with *Streptococcus hemolyticus* survived six days when 4′-sulfamido-2,4-diaminoazobenzene hydrochloride (rubiazol) was given *per os* in a single dose of 0.005 Gm. for a 20-Gm. mouse. Survival was extended to from 10 to 17 days when the same dose was given subcutaneously. Some curative action was shown by repeated injections. Rubiazol shows a preventative action if the infection takes place within 48 hours after the preventative treatment. It stops the multiplication of the streptococci without total destruction of the microbes.—CONSTANTIN LEVADITI and ARON VAISMAN. *Compt. rend.*, 200 (1935), 1694. (G. W. H.)

BOTANY

Acorus Calamus—Seed and Seedling of. This species appears to be sterile in Europe where it has been naturalized. This is also true of plants introduced from Europe. In Minnesota, where it appears to be native, the plant fruits abundantly. The fruit is a 3-celled, gelatinous berry containing usually 5–7 orthotropous, ovoid, somewhat angled seeds pendant from an axillary placenta. The cylindrical embryo lies in the axis of the endosperm, which is surrounded by a thick callous perisperm. The seed coat is made up of a thin tough tegmen surrounded by a thicker testa. In germination, the tip of the cotyledon remains as an haustorial organ and lifts it into the air. The seedling immediately becomes green, develops absorbing hairs and is early independent. The single vascular bundle of the cotyledon passes directly down into one pole of the diarch root while the midrib of the first plumular leaf is directly continuous with the other pole.—MURREY F. BUELL. *Botan. Gaz.*, 96 (1935), 758–765. (G. W. F.)

Brazilian Euphorbiaceæ—Essential Oils from. The N. O. Euphorbiaceæ is represented in Brazil by 62 genera and almost 900 species. The author describes a few of the species derived from recent research work.—F. W. FREISE. *Perf. and Ess. Oil Rec.*, 26 (1935), 219. (A. C. DeD.)

Cytisus Scoparius—Natural Distribution of, in Virginia with Special Reference to Soil Reaction. The plant was found to favor soil with a p_H from about 6 to 6.7.—THOMAS W. TURNER. *Bull. Torrey Botan. Club*, 62 (1935), 331–335. (G. W. F.)

Datura Stramonium and D. Metel—Fertilization of, in the Incompatible Cross. The fertilization process is discussed. The incompatibility is apparently caused by disintegration of

the cells of the endosperm and proembryo.—SOPHIA SATINA and A. F. BLAKESLEE. *Bull. Torrey Botan. Club*, 62 (1935), 301–310. (G. W. F.)

Drug Plants—Evaluation of Cultivated, in 1934. The experience resulting from the cultivation of domestic drug plants is described and the results of numerous determinations of the active principles of various plants are tabulated. Investigations show that peppermint leaves usually average 1.3–1.6% of oil, *Coriander sativum* 0.41–0.5%, Russian coriander 0.41–0.6% and Thüringer coriander 0.31–0.4%. In the alkaloid-containing plants, belladonna leaves yielded 0.6–0.83%, hyoscyamus leaves 0.39–0.65% and stramonium leaves 0.44–0.75%. Both *Thymus vulgaris* and hyoscyamus yield a greater percentage of active principle before flowering than after flowering.—K. H. BAUER. *Pharm. Zentralh.*, 76 (1935), 281. (E. V. S.)

Drug Potency—Fluctuation of, during Growth. The authors present a study of the factors affecting the quantity of active constituent of the following drugs: *Mentha piperita, Thymus vulgaris, Melissa officinalis, Digitalis lanata, Hyoscyamus niger* and *Datura stramonium.* The drugs were carefully collected at regular intervals, dried, assayed and the results graphed. A series of hot, dry, sunny days causes the ethereal oil content of the drugs to decrease, whereas similar weather causes an increase in alkaloidal and glycosidal content of the drugs. Similar studies applied to other drugs should lead to the cultivation of a better grade of drugs.—O. DAFERT, W. HIMMELBAUR and K. LOIDOLT. *Scientia Pharm.*, 6 (1935), 45. (M. F. W. D.)

Leaves. A comparative anatomical study of various official leaf types including the functional aspects.—H. SOMMER. *Pharm. Zentralh.*, 76 (1935), 150, 159. (E. V. S.)

Matricaria—Italian and Hungarian. To discover the cause of the superiority of commercial Italian matricaria to the Hungarian drug, the author grew some from Hungarian seed side by side with some from Italian seed. The flowers were collected at the same time and dried under the same conditions. The Italian flowers yielded 0.7865% of a clear blue, well-flavored essential oil; those from Hungarian seed yielded 0.469% of a brownish-green oil of not too pleasant an odor. He therefore concludes that the Italian and Hungarian plants are different varieties.—G. BISCARO. *Boll. chim.-farm.*, 73 (1934), 758; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 138.

Rhubarb—Culture of Chinese. The cultivation of two species, *Rheum palmatum* (L.) Tsch. and *R. cordifolium* nov. spec., is described.—A. TSCHIRCH. *Apoth. Ztg.*, 50 (1935), 42; through *Chem. Abstr.*, 29 (1935), 42.

CHEMISTRY

GENERAL AND PHYSICAL

Medicinal Chemistry—Contributions of. An outline of early and recent accomplishments and objectives of the future.—C. R. ADDINALL. *Ind. Eng. Chem.*, 27 (1935), 533. (E. G. V.)

Salt Hydrates—Vapor Pressure and Dehydration of Unstable. Sodium Perborate. A study is made of the factors influencing the rate of dehydration of salt hydrates. A partial explanation of the mechanism of dehydration is given, and equations are developed which give the rate of dehydration for hydrates having different rates of nucleus formation. The influence of temperature, air pressure, air velocity, depth of material and area exposed and size of particles on the rate of dehydration is evaluated. When sodium perborate is dehydrated at 50° to 60° C. until there is a loss in weight equivalent to 3 molecules of water or 35.5%, there is a gain in available oxygen up to 15.7%, which corresponds closely to the expected 16.2%. By prolonging the dehydration at 60° to 65° C., or on heating to a higher temperature for a shorter time, the color of the residue changes to a weak yellow at lower temperatures and to a definite yellowish color at higher temperatures. There is some loss in oxygen and water, and, when the product is put into water, gaseous oxygen is evolved. The violence of the action and the amount of oxygen evolved depend upon the time and temperature of heating.—T. I. TAYLOR and G. G. TAYLOR. *Ind. Eng. Chem.*, 27 (1935), 672. (E. G. V.)

INORGANIC

Mercury—New Method for Its Dry Purification. A current of cotton-filtered air at atmospheric temperature is passed through the mercury for 4 to 5 hours; on leaving the mercury the air is cooled and passed through a tower of activated bone char containing iodine which completely absorbs entrained mercury. This gives a technically pure product suitable for gages, etc. To obtain a product suitable for thermometers (at least 99.6% purity), continue passing air and

gradually raise the temperature to 105° C. in 2 hours, keep at this temperature for at least 15 minutes, and filter repeatedly through paper cones perforated with a fine hole. C.P. mercury has a brilliant surface; when 100 cc. are shaken for 15 minutes in a white 1-liter flask the surface must not be covered with a dull film. The method is economical, simple and free from danger, and the mercury retained by the char or the impurities can be recovered easily.—ZIENER. *Glas U. Apparat*, 15 (1934), 187–189; through *Chimie & Industrie*, 33 (1935), 1118. (A. P.-C.)

ORGANIC

Alkaloids

Apoquinine and Apoquinidine. Demethylation of quinine with either aluminum chloride or 60% sulphuric acid yields so-called "apoquinine," which the authors have found to be mainly a mixture of apoquinine and chlorodihydroapoquinine. This mixture forms a dihydrochloride and a zincichloride, the latter on repeated recrystallization from concentrated hydrochloric acid becomes constant in composition and physical properties. By repeated recrystallization of crude apoquinine and its acid dianisoyl-*d*-tartrate from methyl alcohol and acetone, pure chlorodihydroapoquinine and apoquinine free from chlorine have been obtained. Well-crystallized and apparently pure quinidine of commerce usually contains 20 to 30% of dihydroquinidine. Using specially purified quinidine of 99.5% purity the authors have obtained, by demethylation, two new substances:—isoapoquinidine, $C_{19}H_{22}O_2N_2$, colorless hexagonal prisms, melting point, 245° C. $[\alpha]_D^{15°C.}$, 12.6° (c = 1 in alcohol) or +25.6° (c = 0.78 in *N*/10 sulphuric acid); and apoquinidine, a dextrorotatory crystalline substance yielding well-crystallized salts, which is difficult to purify, and is still under investigation. Formulae and physical constants of a number of bases and their salts are given.—T. A. HENRY and W. SOLOMON. *J. Chem. Soc. Lond.* (1934), 1923; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 116.

Corynanthine—Constitution of. Corynanthine and yohimbine are cis-trans isomers. The methyl and ethyl esters of the base obtained by the saponification of corynanthine with potash, as well as the apo-derivative, are identical with the corresponding derivatives prepared from yohimbine. The author suggests that the name pseudo-corynanthine applied by Raymond-Hamet (*Compt. rend.*, 199 (1934), 1658) to the base obtained by saponifying corynanthine with alkali be stricken from the literature.—CAESAR R. SCHOLZ. *Compt. rend.*, 200 (1935), 1624. (G. W. H.)

Ergobasine, New Water-Soluble Alkaloid of Ergot. About 0.06 Gm. of this new alkaloid ($C_{19}H_{23}N_3O_2$) can be obtained from 1 Kg. of commercial ergot. It has been possible to extract a few grams of pure crystalline ergobasine in the commercial manufacture of ergotamine and ergotoxine. It is obtained by extracting finely powdered ergot with water and exhausting the aqueous extract with chloroform from which the ergobasine crystallizes upon concentration and can be purified by recrystallization from trichlorethylene or benzene. It can also be obtained by dissolving a mixture of the total alkaloids of ergot in chloroform; when a certain concentration is reached the ergobasine crystallizes out. It crystallizes in right-angled prisms. The aqueous solution (1–200 or 300) is alkaline to litmus with an intense bluish fluorescence. It is very soluble in ethyl and methyl alcohol, readily soluble in ethyl acetate; 1–5000 in cold and 1–750 in hot chloroform. Recrystallized from alcohol and dried to constant weight it softens at 159° and decomposes at 162°. A 0.25% aqueous solution has a rotation of $[\alpha]_D^{20} = +90°$. The solutions are sensitive to light and air which without doubt accounts for the variation in the strength of the galenical preparations. While the reactions with the general alkaloidal reagents are positive, it can be distinguished from ergotamine by the concentrations necessary. These two alkaloids are the only two extractives from ergot to give crystalline salts. Ergobasine merits a thorough pharmacological study; it bears a resemblance to the ergometrine of Dudley and Moir but is sharply distinguished from the latter being dextro while ergometrine is lævogyrate.—ARTHUR STOLL and ERNEST BURCKHARDT. *Compt. rend.*, 200 (1935), 1680. (G. W. H.)

Ergometrine—Isolation of. Ergometrine, discovered by Dudley and Moir (*Brit. Med. J.*, 1 (March 16, 1935), 521) is appreciably soluble in cold water and moderately soluble in chloroform, benzene and dichloro-ethylene, from which it may be recrystallized. The specific rotation of the material recrystallized from benzene, in 0.1% solution in chloroform, is −45 degrees, and a provisional analysis gives the values C 71.46; H 7.38; N 11.66%. Ergometrine gives the dimethyl-

aminobenzaldehyde and glyoxylic acid color reactions common to the known ergot alkaloids. The long delay in the discovery of ergometrine is due to its having no distinctive pharmacological properties, so far as has yet been determined, and the chemical isolation has been dependent on clinical tests throughout. The importance of ergometrine is obvious enough, but certain conclusions drawn by the discoverers seem to be too hasty. The action of ergometrine is sudden and vigorous, and subsides in two hours; it cannot maintain continuous contraction when given only three times a day. The action of ergotoxine, on the other hand, is much more persistent. Dudley and Moir argue that since the effect of a single dose of ergotoxine administered by mouth, even as large as 2 to 3 mg., does not begin for thirty-five minutes, and is relatively feeble, oral administration of ergotoxine is useless. But oral administration of ergotoxine three times a day for several days may be far from useless; the full effect may not be obtained for three or four hours after the first dose, but thereafter it may be maintained by the repeated doses throughout the puerperium without interruption. To suggest, as Dudley and Moir do, that ergotoxine may possibly be undesirable in preparations for oral use is surely against the weight of the present evidence.—J. H. BURN. *Pharm. J.*, 134 (1935), 357. (W. B. B.)

Holarrhena Antidysenterica—A New Alkaloid from the Bark of. The drug is used in Burma as a remedy for dysentery and as a febrifuge under the name of lettôk. The alkaloidal content of the bark was 1.2 to 1.36%. The alkaloids were extracted with cold dilute hydrochloric acid; cold alcohol; and hot alcohol. A second extraction with alcoholic ammonia yielded an extra 0.1 to 0.2%. When the alkaloids were separated in the usual manner, an alkaloid ($C_{17}H_{25}O_2N$) giving a hydrochloride soluble in water, but sparingly soluble in hydrochloric acid was found. The base, purified through the hydroiodide (m. p. 256°-decomp.), was obtained as a light brown powder (m. p. 350–352°). It does not appear to be identical with any of the alkaloids previously described as present in the bark and the name *lettocine* is suggested. It appears to be a tertiary base and to contain no hydroxyl groups. The amount present in the bark is less than 0.1%. No alkaloids were found in the latex, but alcoholic extraction yielded two crystalline solids of the resinol type. The chemical constants of alkaloids previously reported are reviewed.—D. H. PEACOCK and J. C. CHOWDHURY. *J. Chem. Soc.* (1935), 734–735. (G. W. F.)

Ipecac Alkaloids—Distribution of, in the Rubiaceæ. The roots of *Remijia Amazonica* Schum. yield 0.75–0.82% of emetine, 0.43–0.62% of cephaeline, 2.22–3.18% of oleoresin (a skin irritant and drastic), 0.035–0.055% of ethereal oil, 1.65–1.92% of fatty oil, 1–2.2% of saponin and 14–18% of tannins. It is also known as *Poaya brava*. In *Ferdinandusa Elliptica* Schum. var. *Belemnensis* Ducke, the outermost roots yield 0.88–0.96% of emetine, 0.26–0.33% of cephaeline, 0.02–0.035% of psychotrine and a trace of ethereal oil. The plant grows along the shores of Paraguay and Peru where it is used for dysentery. *Tocoyena Longiflora* Aubl., a native of French Guiana and Brazil, contains in its roots 1.31–1.66% of emetine, 0.62–0.68% of cephaeline, 0.02–0.08% of psychotrine and some oleoresin. *Caperona Decorticans* Spruce, the roots of which are found in many patent medicines, yields 0.68% of emetine, 0.74% of cephaeline, 0.11% of psychotrine, 5–8% of a yellowish red coloring principle and about 11% of tannins. The yellowish white bark of *Bothriospora Corymbosa* Hook., also known as Ipeca lisa, contains 1–1.35% of emetine, 0.10–0.22% of cephaeline, and a trace of psychotrine. The stem bark of *Hillia Illustris* (Vell.) Schum., an epiphyte, yields 1.11–1.37% of emetine without any accompanying alkaloids. A short botanical description and the South American habitats of the above plants are included.—FRIEDRICH W. FRIESE. *Pharm. Zentralh.*, 76 (1935), 223. (E. V. S.)

Kola-Nut—Cultivated in Brazil. The fresh Brazilian kola-nut contains water 40, caffeine 1.41, theobromine traces and mineral salts 1.96%. Its caffeine content is about the same as that of African nuts.—V. VARGAS. *Bol. assoc. brasil. pharm.*, 15 (1934), 250; through *Chem. Abstr.*, 29 (1935), 4129.

Lévorénine (Adrenaline). A review of the methods of preparation of natural and synthetic adrenaline. The assay and standardization of adrenaline are discussed.—LAPINÉ and LAVOYE. *J. pharm. Belg.*, 17 (1935), 485–488, 507–509. (S. W. G.)

2-Phenylquinoline-4-carboxylic Acid—Quinine Salt of. A tasteless product is obtained by preparing the salt as described in German Patent 563,457 but at any convenient temperature, and then washing it at 60–70° with water, benzene or other liquid in which it is also sparingly soluble.—R. and O. WEIL, chem.-pharmazeutische **Fab.** German Pat. 611,235 (Mar. 25, 1935); through *Chem. Abstr.*, 29 (1935), 4134.

Physostigmine—Synthesis of. II. It has already been reported that desoxydinoreseroline and desoxy-9-methyldinoreseroline are obtained by reacting Grignard compounds of tryptamine or α-methyltryptamine with methyl iodide. By using 5-ethoxy- and 5-methoxytryptamines, it has now been found, dinoreserthole and -methole, which serve as starting materials in the synthesis of eserine, may be obtained. Optical resolution of dinoresermethole was realized by means of *d*-bromocamphorsulphonic acid and *d*-tartaric acid. Since methyl-β-(5-alkoxy-3-indolyl)-ethylamine may be the starting point for the synthesis of eserine, this possibility was tested by monomethylating tryptamine. On reacting the methyl iodide with tryptamine, only the quarternary iodide was obtained. Then benzylidenetryptamine was reacted with methyl iodide, but instead of the expected secondary base, two new substances were separated: 3-phenyl-3,4,5,6-tetrahydro-4-carboline and 3-phenyl-4-methyl-3,4,5,6-tetrahydro-4-carboline-iodomethylate.—T. HOSHINO and Y. KOTAKE. *Ann.*, 516 (1935), 76; through *Squibb Abstr. Bull.*, 8 (1935), A-594.

Senecio—Alkaloids of. Barger, *et al.*, isolated an alkaloid related to senecifoline and senecifolidine, from so-called *Senecio latifolius* and from accurately identified *S. retrorsus D.C.* The compound was identical with the retrorsine (I) of Manske, melting point, 212° (Manske, 214–215°, cor.) readily soluble in alcohol, chloroform, slightly soluble in water, acetone and ethyl acetate, and hardly soluble in ether, and gave a monophenylcarbamate, melting point, 200–202°; a nitrate, melting point, 145°; a methiodide, melting point, 260° and a perbromide. Acid or alkaline hydrolysis of I yielded retronecine (II) and retronecic acid (III). II, melting point, 121–122°, contained neither O-CH_3 nor N-CH_3 groups, did not react with nitrous acid, and formed a quarternary iodide with methyliodide, probably being a tertiary base. It contained two reactive hydrogen atoms and gave a diacetyl derivative when boiled with acetic anhydride, which when catalytically reduced lost one acetoxy group and took up four hydrogen atoms. The authors could not demonstrate a ketone group in II. Catalytic reduction of I, II and the diacetyl derivative of II (IV) with platinum oxide gave rapid absorption of four hydrogen atoms. With palladium and hydrogen, I and IV gave similar results but II yielded a substance which treated with mineral acid gave an analogue of pyrrole red and on further reduction gave retronecanol (V). Oxidation of V gave a compound with a methiodide of melting point, 292–295° C. and was presumably derived from an acid $C_5H_4NCO_2H$ (picolinic?), but more material is required for identification. III was a dihydroxy-dicarboxylic acid, $C_{10}H_{16}O_6$, melting point, 177°, and when heated with anhydrous oxalic acid for several hours, yielded a lactone acid, melting point, 181–183°. II and III may have been combined in I by two or by one ester linking; in the latter case the second molecule of water used up in hydrolysis would hydrolyze a lactone group.—G. BARGER, T. R. SESHADRI, H. E. WATT and T. YABUTA. *J. Chem. Soc.* (Jan. 1935), 11; through *Squibb Abstr. Bull.*, 8 (1935), A-598.

Yohimbine. Commercial preparations of yohimbine hydrochloride (I) were found to consist mainly of isoyohimbine (II), melting point, 239–240°, $[\alpha]_D$ in 1% pyridine = 108.5°. II was best obtained by heating I in aqueous alcoholic solution with tartaric acid; II-tartrate, melting point, 252–253°, II-hydrochloride, melting point, 298–299°. II was converted to isoyohimbic acid (III), melting point, 268–269° by treating II with potassium hydroxide, acidifying with hydrochloric acid, concentrating and precipitating with ammonium hydroxide. III-methyl ester, melting point, 239–240°; III-ethyl ester, melting point, 202–204°. Yobyrine, $C_{19}H_{16}N_2$, melting point, 217–218°, was hydrogenated in the presence of platinum oxide to decahydroyobyrine, $C_{19}H_{26}N_2$, melting point, 228–229°, picrate, melting point, 195–196°. Reduction of tetrahydroyobyrine gave octahydroyobyrine, $C_{19}H_{24}N_2$ (yobine), melting point, 177–178°, picrate, melting point, 220–221°; dehydrogenation with selenium gave yobyrine.—J. P. WIBAUT and A. J. P. GASTEL. *Rec. trav. chim.*, 54 (1935), 85; through *Squibb Abstr. Bull.*, 8 (1935), A-678.

Essential Oils and Related Products

Aniseed Oil—Preliminary Report on Study of, from Kuangsi. The seed of *Illicium verum* Hook produced in Kuangsi province, China, known as *Fructus anisi Stellati*, contains 9% essential oil of which 92% is anethole. This essential oil has the following physical constants: d_4^{25} 0.979–0.970, n_D^{52} 1.5437–1.5407, α_D +1.5°, melting point 19.5–20°, solidifying point 15.5°.—CHIH-HSIU WANG. *Chem. Ind.* (China), 9 (1934), 27; through *Chem. Abstr.*, 29 (1935), 4123.

Citronellol-Rhodinol Isomerism—Study of, by Means of Raman Spectrography. The Raman spectra, specific gravity, refractive index and specific rotatory power were determined for

citronellic acid (*I*) and citronellal (*II*) (both from Java oil of citronella); for citronellol obtained by reduction (*a*) of ethyl citronellate (*III*), (*b*) of citronellal by aluminum butyrate (*IV*), and (*c*) over nickel of the mixture of citronellal and geraniol from oil of citronella with the citronellol therein (*V*); and of rhodinol from Reunion oil of geranium purified by treatment with benzoyl chloride (*VI*). *I, III* and *VI* are mixtures of the α and β forms, β preponderating; no α is detectable in *II, IV* and *V*.—Y. RENE NAVES, GEORGES BRUS and JEAN ALLARD. *Bull. Inst. Pin*, (1935), 52–53. (A. P.-C.)

Madagascar Clove Oil. Survey of Primary Production. The oil produced in Madagascar is derived mainly from clove leaves, only a small extent from clove stems. It is estimated that there are about 170 stills operating, about 100 in the Soaneriana District and 70 in Sainte Marie. A table showing the exports of Madagascar clove oil is included. Supplies of leaves are obtained by cutting out the growing top of the clove tree to a depth of about 3 feet, thus leaving a cup-shaped depression at the top of the tree. The oil from the distilleries is transported in large glass bottles, and purchased by European exporters or Chinese traders. Good Soanierana oil is reported to contain 85% eugenol.—ANON. *Perf. and Ess. Oil Rec.*, 26 (1935), 204. (A. C. DeD.)

Perfume Chemistry—New Procedures in. A review.—A. LEWINSON. *Riechstoff-Ind. Kosmetik*, 10 (1935), 85–88, 104–106. (H. M. B.)

Spirit of Turpentine—Oxidation of. Tests were carried out on the oxidation of the tail fraction of spirit of turpentine in presence of galvanized iron, zinc and iron, respectively, as catalysts, and on American spirit of turpentine in presence of galvanized iron. The results confirmed that oxidation proceeds differently in presence of iron and of zinc as catalyst. In presence of zinc, formic acid is the principal product formed; oxidation products that are present in old spirit of turpentine have long been known to act as catalysts, and having the same action as zinc. At high temperature (during distillation) their action is instantaneous and is accompanied by liberation of water. Use of galvanized containers for spirit of turpentine is therefore quite inadvisable. In presence of iron, oxidation produces mainly resinic acids, which are partly insoluble in the liquid.—J. TERPUGOFF. *Bull. Inst. Pin* (1935), 6–10. (A. P.-C.)

Sweet Basil Oil. A discussion of the botany, cultivation, distillation and chemical characteristics of oil of sweet basil (*Ocimum basilicum* L.) and a common adulterant, "Reunion basil oil." Chemical constants for genuine sweet basil oil were found to be: sp. gr. (15° C.) 0.914–0.935; opt. rotat. −10°50′ to −4°8′; sapon. value 5.1–14.5; refrac. index 1.4869–1.4929; alcohol content 33–41%.—ERNEST S. GUENTHER. *Am. Perfumer*, 30 (1935), 183–185. (G. W. F.)

Fixed Oils, Fats and Waxes

Fats—Antioxidants and the Autoxidation of. Methods are described for estimating the length of the induction period of lard and lard-cod liver oil mixtures by oxygen absorption, for measuring the minute pressure changes occurring in a closed system during and immediately following the induction period, and for determining the peroxide content of autoxidizing fats by slight modifications of the usual thiosulphate titration procedures. The prolongation of the induction period by some natural autoxidants and several phenolic compounds is proportional to the amount used. At the end of the induction period the level of peroxide in lard or lard-cod liver oil mixtures is fairly uniform, irrespective of the length of the induction period or of the original peroxide content. With one natural inhibitor there seemed to be a mutual destruction of antioxidant and active peroxides. Some of the difficulties in obtaining reproducible data are discussed.—R. B. FRENCH, H. S. OLCOTT and H. A. MATTILL. *Ind. Eng. Chem.*, 27 (1935), 724. (E. G. V.)

Halibut Liver Oil—Preservation of, with Hydroquinone. Presence of an anti-oxidant in cod liver oil retards absorption of oxygen, prevents loss of vitamin A and development of malflavors. Since halibut liver oil has a high concentration of vitamin A and requires special refining to free it from objectionable natural odor and taste, protection of an anti-oxidant is important. The present report shows that hydroquinone greatly retards absorption of oxygen and loss of vitamin A in halibut liver oil. Experimental details reported include type of oils studied, preparation of the samples, testing of samples, vitamin A color unit, technique of the antimony trichloride vitamin A color test. Several tables and several graphs show results of experiments. Oils without hydroquinone differ in susceptibility to oxidation, especially in the "air" experiment. The same oils with hydroquinone do not differ appreciably in susceptibility to oxidation. An oil with 0.03% hydroquinone is quite resistant to oxidation. Since maleic acid inhibits oxidation of un-

saturated fats, oils, fatty acids and substances containing fatty material and tend to become rancid, a series of experiments was set up using it, but results were negative. The authors conclude that hydroquinone retards absorption of oxygen by refined halibut liver oil from air and from pure oxygen, and retards deterioration of vitamin A, as shown by color test and biological test.—W. S. JONES and W. G. CHRISTIANSEN. *J. Am. Pharm. Assoc.*, 24 (1935), 465. (Z. M. C.)

Glycosides, Ferments and Carbohydrates

Folinerin. A crystalline chemically uniform glucoside with complete digitalis action has been isolated from oleander leaves. It crystallizes from dilute alcohol in prismatic needles, melting point 249°, shows a specific rotation of $[\alpha]_D^{20}$ 45.95°, has an empirical formula $C_{29}H_{46}O_8$ (molecular weight 582), is relatively stable to dilute acids and seems to be related to Windaus' "oleandrin," if not identical with it. On splitting off the sugar from this glucoside, a formerly unknown aglucone, oleandrigenin, $C_{23}H_{36}O_6$, is formed. This is isomeric with gitaligenin, and, like it, splits off water under energetic acid action to form digitaligenin, $C_{23}H_{36}O_3$. While in general the aglucones are much less active than the glucosides, in the case of this new glucoside, folinerin, its aglucone, oleandrigenin, is superior to all the aglucones of the digitalis group in pharmacological activity. The cat unit (Hatcher-Magnus method) is 0.25 mg./Kg. Folinerin is very active, a dilution of 1–500,000 producing tonic stoppage of isolated frog hearts and other typical actions of digitalis. On the intact heart, 1 mg. folinerin is equivalent to 1200 frog doses. These values place it in the strophanthin group. The cat unit of folinerin corresponds to 0.24 mg./Kg. (Hatcher-Magnus). In cats the lethal dose is 0.2 mg./Kg. subcutaneously; rectally 0.24 mg./Kg. The fact that the lethal dose with subcutaneous or rectal administration is so near the intravenous value (0.12 mg./Kg.) points to the marked resorbability of the glucoside. This is in agreement with the markedly small molecule of folinerin. With regard to oral administration, it is of great importance that the glucoside is resorbable and resistant to dilute acids. As regards the cumulation of folinerin, it is easier to reverse its tonic stoppage of the isolated frog heart by washing than is the case with digitoxin. Furthermore, after a preliminary dose, the additional dose required to produce death is larger for folinerin than for digitoxin. Folinerin is very stable, an aqueous-alcoholic solution showing no change in activity after three years' storage. In man, the glucoside is tolerated without any sequelæ whatsoever, to the extent of 1 mg. which is considerably above the therapeutic dose.—F. FLURY and W. NEUMANN. *Klin. Wochschr.*, 14 (1935), 562; through *Squibb Abstr. Bull.*, 8 (1935), A-764.

Glycyrrhizin. Dilute alkali extract of licorice is treated with magnesium or calcium salt until there is no further precipitation. From the filtrate glycyrrhizin is separated by acidifying.—KANEGAHUCHI BOSEKI K. K. (Toyo Ito, inventor). Japan. 109,401 (Jan. 29, 1935); through *Chem. Abstr.*, 29 (1935), 3784.

Other Plant Principles

Calumba Root—Bitter Principles of. The bitter principle, chasmanthin, a crystalline substance, $C_{20}H_{22}O_7$, has been isolated not only from the calumba root but from another calumba principle, columbin, on treatment with acids or alkalies. Chasmanthin is present in a high melting (265°) and low melting (212°) form, both of which can be transformed into the form usually found in the root, *i. e.*, melting at 246°. Methylation of columbin as well as that of chasmanthin yields chasmanthin monomethyl ether. Columbin, $C_{22}H_{24}O_7$, melting point, 182° (decomposition) is optically inactive as is chasmanthin. It probably contains a β-lactone-group, while chasmanthin seems to have two lactone rings. The thermal decomposition of columbin was studied.—K. FEIST, P. RINTELEN and E. KUNTZ. *Ann.*, 517 (1935), 119; through *Squibb Abstr. Bull.*, 8 (1935), A-729.

Hai-jen-tsao (Digenia Simplex Ag)—Chemical Study of. Hai-jen-tsao, a variety of marine alga, has long been used in China as a vermifuge. The algenic acid extracted by 2% sodium carbonate contains uronic acid and either glucuronic or mannuronic acid. The boiling-water extract yields galactan, *d*-pararabin, a small amount of alkaloids and fucoidin, which are subjected to detailed examination. It contains 0.20% of iodine.—CHIH-FANG HSU. *Science* (China), 18 (1934), 1418; through *Chem. Abstr.*, 29 (1935), 4129.

Stramonium—Constituents of European Datura, Cultivated in China. From air-dried European *Datura stramonium* cultivated in China, there were isolated, besides hyoscine, hyoscy-

amine and atropine, two neutral principles to the extent of 0.3%, *datugen* $C_{13}H_{20}O_2$, melting point, 295°, α 41.60° and *datugenin*, $C_{16}H_{22}O_5$, melting point, 265°, α 75°.—T. Q. CHOU. *Chinese J. Physiol.*, 9 (1935), 77; through *Chem. Abstr.*, 29 (1935), 4130.

Valerian—Presence of α-Pyrryl Methyl Ketone in Stabilized. The residues (2770 Gm.) from the fresh rhizomes and roots of valerian stabilized with ethyl alcohol were employed. The filtrate obtained after distillation of the ethyl alcohol was washed with ether which left an acid residue with an odor of valeric acid, was neutralized with sodium carbonate (25%), and extracted with ether (357 Gm.). The ether extract upon evaporation yielded a brown semi-liquid mass, which was saponified with alcoholic potassium hydroxide (10%). The solution was concentrated, taken up with water, extracted with ether and from this residue (107 Gm.) was obtained a liquid (10%) $b_{0.75}$ 60–125°, which after further fractionation yielded a yellowish liquid (16%) b_{65} 68–73°, producing upon standing 0.2 Gm. of a solid, crystallized from petroleum ether, melting at 90°, soluble in water and organic solvents. This was identified as α-pyrryl methyl ketone by its oxime (melting point, 144–145°), phenylhydrazone (melting point, 143–144°), furacrylic derivative (melting point, 134–135°), which melting points agree well with those obtained for the derivative from the synthetic product.—E. CIONGA. *Compt. rend.*, 200 (1935), 780; through *Chem. Abstr.*, 29 (1935), 3770.

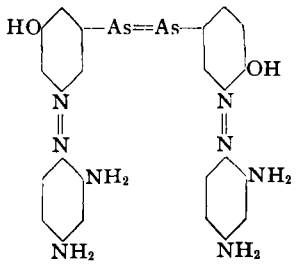
Unclassified

Arsenamides. Compounds Containing the As-N Linkage. Those who have investigated the reaction between arsenous halides and amines have given conflicting reports. These are discussed briefly. Work described in the present paper indicates that the reaction is more complex than previous work indicated. The earlier conflicting reports are due to failure to isolate all the products of the reaction. In nearly all reactions two or more products were obtained or indicated. The reaction between an arsenous halide and an amine takes place according to the following equations:

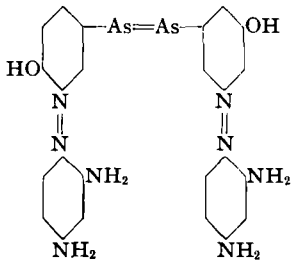
1. $AsX_3 + RNH_2 \rightarrow X_2As.NHR.HX$
2. $X_2AsNHR.HX + RNH_2 \rightarrow X_2AsNHR + RNH_2.HX$
3. $AsX_3 + 2RNH_2 \rightarrow XAs(NHR.HX)_2$
4. $XAs(NHR.HX)_2 + 2RNH_2 \rightarrow XAs(NHR)_2 + 2RNH_2.HX$
5. $AsX_3 + 3RNH_2 \rightarrow As(NHR.HX)_3$

The course of the reaction is influenced by order of mixing, strength of base and the arsenous halide used, possibly also certain steric effects. Under these varying conditions $As(NHC_6H_5.HCl)_3$, $Cl_2AsNHC_6H_5$, $As[N(CH)_3C_6H_5.HCl]_3$ were obtained. In addition to the arsenic compounds there is always a large amount of ammonium halide formed. Several types of compounds have been isolated. The type $XAs.(NHR.HX)_2$ and $As(NHR.HX)_3$ are high melting solids, soluble in water, usually with decomposition and insoluble in organic solvents. They resemble ammonium halides in properties. Compounds of the type X_2AsNHR are high-boiling liquids or low-melting solids. They fume in the air and are decomposed violently by water. The name "arsenamide" is suggested for compounds containing the As-N linkage. So the following compounds prepared by the author are named: $C_2H_5(I)As\text{-}NHC_6H_5$, aniline-ethyliodoarsenamide; $Cl_2AsN(C_2H_5)_2$, diethylaminedichlorarsenamide; $As(NC_5H_{10}.HCl)_3$, piperidine-arsentriamide trihydrochloride; $ClAs(NH.CH_2.CH_2NH_2.HCl)_2$, ethylene-diamine-chlorarsendiamide dihydrochloride. Experimental work is reported and each of eleven reactions discussed in detail.—G. O. DOAK. *J. Am. Pharm. Assoc.*, 24 (1935), 453. (Z. M. C.)

3,3′-Bis-(Azometa-Phenylenediamine)-4,4′-Dihydroxyarsenobenzene and 3,3′-Bis-(Azo-2,6-Diaminopyridine)-4,4′-Dihydroxyarsenobenzene—Preparation and Properties of. Since it is known that certain azo dyes penetrate tissue readily and also that some have a definite trypanocidal action, it was decided to prepare some azo dyes from arsphenamine base by diazotizing it and coupling with diamines. Arsono and arseno azo compounds have been described and some patents have been issued but none are of the type prepared by diazotizing arsphenamine and coupling with metaphenylenediamine and with 2,6-diaminopyridine. The two substances prepared are named in the title and have the following structural formulas:



(I.)



(II.)

Aqueous sodium hydroxide solutions of these compounds, injected intravenously into albino rats, stained conjunctiva, ears and abdominal cavities in the characteristic manner. Both compounds were much more toxic than other arsphenamines. The sodium salt of I was bacteriostatic to *B. Typhoid* and *B. Staphylococcus* in concentrations of 1–20,000. The free base was only slightly soluble in water but a saturated aqueous solution was bacteriostatic to both *B. Typhoid* and *B. Staphylococcus*. Both compounds seem too toxic for therapeutic use. Details of the experimental work are reported. Results of bacteriostatic and germicidal tests are tabulated.—A. E. JURIST. *J. Am. Pharm. Assoc.*, 24 (1935), 457. (Z. M. C.)

5,5-Diphenylbarbituric Acid. The compound, which cannot be prepared by the conventional method, was obtained in small yield along with a high melting, unidentified product, by the condensation of benzene with alloxan by means of sulphuric acid. It was tested intraperitoneally on rats and was found to be effective only in doses 6–8 times the effective dose of luminal. The effective doses invariably caused death.—S. M. MCELVAIN. *J. Am. Chem. Soc.*, 57 (1935), 1303. (E. B. S.)

BIOCHEMISTRY

Barbituric Acid Derivatives—Determination of, in Urine. Fifteen to twenty cc. of urine are boiled with 0.2 Gm. norite and centrifuged warm. The clear supernatant liquid is decanted and the residue collected on a filter and dried. The residue is then warmed with 3 to 4 cc. of absolute alcohol and 5 cc. of chloroform and filtered. Two cc. of this filtrate is cleared with absolute alcohol, 20 drops of 1% solution of cobalt nitrate in absolute alcohol and several drops of a 1% solution of potassium hydroxide in absolute alcohol added. In the presence of barbituric acid derivatives a blue color appears. Morphine, apomorphine and eukodal give similar reactions.—MOHRSCHULZ. *Münch. med. Wschr.*, No. 18; through *Pharm. Weekblad*, 72 (1935), 696. (E. H. W.)

Benedict's Test—Modification of. This method, for the rapid determination of sugar in urine, is based on the depth of color of the filtrate obtained after heating 5 cc. of Benedict's qualitative reagent with 0.5 cc. of urine in a boiling water-bath for five minutes. The color of the filtrate is compared with standards. If the urine contains 2.0% of glucose the 5 cc. of reagent is just decolorized and the filtrate is colorless; *i. e.*, the presence of 0.4% of glucose in the urine would result in the decolorization of 1 cc. of the reagent. The standard color for this amount of sugar is obtained by dilution of 4 cc. of the reagent to 5.5 cc. with water. A series of standards is prepared by diluting decreasing volumes of the reagent to 5.5 cc.; each decrease of 1 cc. of reagent will correspond to an increase of 0.4% of glucose in the urine. The accuracy obtained by this method is sufficient for clinical purposes.—J. FINE. *Brit. Med. J.*, 11 (1934), 167; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 133.

Duodenin—Insulotropic Hormone of Intestinal Mucosa. Extracts of the mucosa of the duodenum and the proximal part of the jejunum contain a substance, "duodenin," which stimulates the secretion of insulin from the pancreas. Injected subcutaneously into rabbits, it causes a fall of blood sugar. It is also active if given by mouth. Pepsin does not affect the hypoglycemic action. By treating an extract with pepsin and hydrochloric acid, the action of "secretin," which stimulates the external secretion of the pancreas, is abolished, but the action of "duodenin" on the internal secretion of insulin remains unchanged. Trypsin seems to reduce the activity of "duodenin."—H. HELLER. *Arch. Exptl. Path. Pharmakol.*, 177 (1935), 127; through *Quart. J. Pharm. Pharmacol.*, 8 (1935), 153.