Reports of A. Ph. A. Committees

THE PROGRESS OF PHARMACY.

When, at the Detroit meeting in 1866, the Association honored me with election to the chairmanship of the Committee on the Progress of Pharmacy, I wondered how, without any experience in literary work, it would be possible for me to prepare an acceptable report in the light of previous reports so ably made by Procter, Parrish, Maisch, and others, and it was with no little trepidation that I began the important task thus committed to me at the first meeing of he Association which it was my privilege to attend. But it would be false modesty if I were to deny that I accomplished the allotted task to my own satisfaction; and that it was acceptable to the Association also, is shown by the fact that—no other member being at the time available—I was again entrusted with the duty of making the report on the progress of pharmacy at the following meeting in New York, in 1867.

It is thus but natural, that having made two consecutive reports I should have been looked upon, in some degree at least, as an authority and should have been frequently consulted on questions pertaining to the work of the Committee on the Progress of Pharmacy, the more particularly because of the increasing difficulty from year to year to find members competent, and if competent willing to undertake the work; and when, in 1872, the chairman of this committee, who was elected although not present, was unable to accept the task of making the report, I was prevailed upon by other members of the committee to make a "volunteer report" which was duly presented at the Richmond meeting of the Association in 1873.

At this meeting the Association decided to abolish the Committee on the Progress of Pharmacy and to appoint a reporter, whose duty it would be to make the annual reports heretofore made by that committee. Logically, the choice fell upon me to fill the newly created office, and it has so happened that with the exception of four years (1892-1895), following my resignation in 1891 by reason of impaired health, I have made the reports on the progress of pharmacy annually to the present date.

During these many years as reporter, the work of abstracting the Journals and preparing the manuscript for the printer has been done by me without assistance; and, with the primary consideration to give the rank and file of the pharmaceutical profession actually engaged in business a clear review of the more important papers that have been published in the world's periodical literature on subjects related to the professional as well as practical side of their calling, the accumulated facts were presented in a form in which they might be utilized without the necessity of referring to the original when practicable, or, when not, with sufficient explanation to justify looking up the original. For the brief reference to some newly discovered fact or observation, while in most cases sufficient to the professional man, the teacher, or the chemist, who has access to a well appointed library, is useless to the average pharmacist who probably has convenient access only to one or two journals, and whose interest may be awakened only by a more

detailed description. I conceived that what interested me, and what I could understand, would also be interesting and understood by the practical pharmacist, and this enabled me to decide what to include (and its extent) and what to omit in the report, from the many subjects that have increasingly presented themselves from year to year.

Losing sight of the main purpose of the report on the progress of pharmacy, *to present a comprehensive and orderly review of the advances made in matters related to the practice of pharmacy during certain specified periods, that would prove of the greatest value as a work of reference for future consultation or research work,* it has frequently been urged that there is too great a delay in the publication of the report, and that the information contained therein has in a certain sense become obsolete before it reaches the eye of the members through the medium of this report. It would be futile to argue with those who hold this view and do not consider its more important value as a work of reference; but it must be conceded that it is desirable to shorten the interval between the period covered by the report and the accessibility of its contents to the members of the Association. This has hitherto been impracticable for two reasons: firstly, because the labor of making the report devolved upon a single individual; and, secondly, because its prompt publication depended on the regularity with which the minutes and other matters for publication were available to the editor of the "Proceedings."

It is now confidently hoped that these untoward conditions will be remedied by the decision of the Association to publish a monthly "Journal," in lieu of the annual volume of "Proceedings," in which such interesting abstracts for the report as are available will be published in advance of the Report on the Progress of Pharmacy. This report is hereafter to be a separate publication, and by giving the reporter the assistance of a number of collaborators, of his own selection, the work of making the abstracts will be divided, and the delay in publication materially shortened. Under the new arrangement, also, the period to be covered by the report for the present year (1911) is to be extended so as to include the six months from June 30 to December 31, making a total of eighteen months, and hereafter the reports are to cover the calendar year, from January 1 to December 31 inclusive. The increased work imposed by extending the period of the report for 1911 to December 31, will necessarily cause some delay in its publication, but it may be confidently expected that the manuscript for future reports will be ready within a month or six weeks after the appearance of the last journal to be abstracted.

In conformity with the new plan I have selected a small number of abstracts which, as they will appear in the Report on the Progress of Pharmacy for the year 1911, are herewith submitted. C. LEWIS DIEHL.

Papyrus Plants.—Indigenous Occurrence along the Cyane River in Sicily.—Dr. P. Siedler gives an interesting account of a journey to one of the few localities in which the plant producing the "papyrus" of the ancients, botanically known as *Cyperus Papyrus*, L. (*Papyrus Antiquorum*, Willd.), is still found. The plant is said to have disappeared completely from Egypt, but along the Cyane, a river which empties along with the Anapo into the basin of the "Porte Grande" of Syracuse, in Sicily, it is still found and, particularly at the headwaters, in great profusion, forming dense thickets on both sides of the river. These plants, rising from the water in straight stems to the height of five meters, are surmounted by a wealth of flowers in form of graceful plumes, and afford a novel

and magnificent feature of the landscape. The stems are blunt-three-cornered and have a circumference of about 18 Cm. at the base, tapering to the apex from which the plumes expand to the number of more than 100 rays. The boatmen illustrate the manner of making the sheets of "papyrus," by splitting sections of the stems deprived of the sheath and about 30 Cm. long into strips about 20 Mm. thick, and plaiting these strips into a mat or sheet, which when flattened out under pressure forms a sheet of papyrus suitable for receiving inscriptions or for decoration with drawings and paintings—such decorated sheets being offered for sale in the stores of Syracuse as mementos. While it is permitted to take samples of the papyrus plants, cut off above the roots, from the country, it is not permitted to take plants abroad with the living roots attached.—Pharm. Ztg. to VI (1911), No. 63, 634-63.

Derris Elliptica.—Characters of Active Constituent.—W. Lenz has extracted from the roots of *Derris Elliptica* by means of boiling benzene a crystalline principle possessing the poisonous properties of the drug, which is used in Java as an insecticide and fish-poison, and is also said to be a constituent of the Borneo arrow poison called "Siren." The new principle, for which the author proposes the name

Derrin, crystallizes from benzene in delicate, yellowish laminæ, which are rendered nearly colorless by washing with cold ether. It is obtained in colorless crystals also from its alcoholic solution; melts at about 158°, and is readily soluble in acetone, benzene (benzol) and chloroform, but difficulty in cold alcohol and cold ether.

The new substance must not be confused with "Derrid," an amosphous, resinous body isolated by Greshoff (see Proceedings 1891, 655), from the root-bark of the plant, and is described by v. Sillevoldt as a yellow powder, melting at 73°, and having an aromatic taste, followed by a benumbing sensation similar to cocaine. Arch. d. Pharm. *249* (1911), No. 4, 298-304.

Derris Stuhlmanni.—Constituents of the Root-bark.—W. Lenz records some preliminary investigations of the root-bark of *Derris Stuhlmanni* received from German East Africa where it is employed as a snake antidote both externally and per os. It yielded to petroleum ether 3% of a colorless fat of ointment consistence; then to ether 5% of a white wax-like mass, melting at 89°-90°, and evidently mainly composed of a wax-alcohol; then to alcohol 2% composed mainly of resin and wax free from tannin and sugar, but had a vanillin-like odor without, however, giving its reaction. The extracted material then yielded 10.2% of a mucilageous substance to water, consisting when completely dry of a horn-like mass, having an insipid sweet test, and containing an abundance of sugar.—Ibid, 304-305.

Digitalis Leaves.—New Researches on Glucosides.—In a preliminary article giving the results of his researches on the glucosides of digitalis leaves, Dr. F. Kraft observes that among the digitalis glucosides described by Schmiedeberg in 1875 (see Proceedings 1875, 444-447); *digitalein* was regarded as the most important, since it combined activity with water-solubility, and would therefore be a constituent of a properly-prepared infusion of the drug. Nevertheless, neither Schmiedeberg, nor later Kiliani, succeeded in preparing a chemically pure body to which the specific name "digitalein" could be applied with the assurance of uniformity in composition, activity, and chemical properties; and the same holds true of the so-called "digalen" described by Cloetta (see Proceedings 1905, 532), which must also be considered a more or less impure form of "digitalein." But, by avoiding all reagents and operations that are liable to cause its decomposition, Dr. Kraft has for several years past succeeded in preparing "digitalein" in a pure, water-soluble form, which he now describes and proposes to distinguish by naming it

Gitalin.—This, as obtained by a very simple process, described in some detail by the author, is a white amorphous powder, permanent in the air, neutral in reaction, and melting at 150°-155°. It is soluble in 600 parts of cold water and in all proportions in chloroform without undergoing change; soluble also in the other organic solvents, with exception of petroleum ether and carbon disulphide, but in these solutions, even in that of ether, it quickly undergoes change, forming a water-insoluble modification. It is obtainable also in a crystalized form, as

Gitalinhydrate; but this shows considerable variation from the original amorphous product, and melts at 75°. It is sparingly soluble in water (3000 parts) and in alcohol; but un-

der proper treatment can be dehydrated and restored to its original condition.—Schw. Wochr. f. Chem. u. Pharm. XLIX (1911), Nos. 12 and 13, 161 and 173.

Russian Opium.—Morphine Content of a Sample Cultivated at Dorpat.—J. J. Muschinski observes that although the poppy is cultivated as an oil-producing plant in the southern and western governments of Russia, experiments to obtain opium have practically been neglected, while the few endeavors that have been made (in Turkestan and Transcaucasia) resulted in the production of inferior opium, as was shown in the Russian Exhibit at Vienna in 1873. The author says that in the summer of 1910 two kinds of poppy were grown from seed in the Dorpat Botanical Garden, the one from the seeds of *Papaver Somnifer.*, L. var. *Glabrum*, Boiss, the other from the seed of the poppy commonly cultivated for its oil. Owing to unfavorable weather conditions, the experiments with the former failed; but they proved very satisfactory with the common poppy, the weather conditions being favorable during the collection of the opium, in the usual manner, by incisions. The darkened and thickened exudation when scraped into a glass dish and dried at a moderate temperature, amounted to 7.5 Gm., and had the characterstic odor, taste and color—the latter perhaps a little lighter—of commercial opium. When dried at 100°, this opium lost 11.4% of moisture, and assayed by Dietrich's mthod 12.2% of morphine.—Pharm. Ztg. (LVI, 1911), No. 60, 604; from Farmaz. Journ. Russ., 1911, 246.

Umbelliferous Fruits.—Content of Fixed Oil and Its Character—Dr. Clemmens Grimme has made some interesting investigations concerning the fixed oil content of umbelliferous fruits which in the industrial distillation of volatile oils are not taken into account and are usually included in the still residues which are utilized either in the moist or dried condition for agricultural purposes, as cattle food, etc. The fixed oils were prepared from the best known of the umbelliferous fruits by extracting them with ether, and after distilling off the solvent heating the residue to drive off the volatile oil as completely as practicable. This treatment did not deprive the residual fixed oil completely of the odor of volatile oil, which, however, was due to mere traces of the latter and did not interfere with the determination of the physical and chemical characters and constants. They were usually dark-colored liquids, having an aromatic taste and odor, variable congealing points, and were obtained in a yield of from 10 to 18 percent—a yield that would seem to justify the assumption that, considering the enormous quantities of these fruits that are modernly subjected to distillation, it might prove quite profitable to separate the fixed oil from the still residues which would remain after suitable treatment for this purpose, quite as valuable for the purposes of cattle-food. The fruits that have been examined by the author are the following: *Carum Carvi*, L.; *Petroselinum sativum*, Hoffm.; *Apium graveolens*, L.; *Pimpinella Anisum*, L.; *Daucus Carota*, L.; *Foeniculum Officinale*, L.; *Anethum graveolens*, L.; *Cumium Cyminum*, L.; *Anthericus Cerefolium*, Hoffm.; *Coriandrum sativum*, L.; and *Ptychotis Ajowan*, D. C.—Pharm. Zeutralh. LII (1911), No. 25, 661-667.

Licorice.—Cultivation in Moravia.—Prof. W. Mitlacher gives some interesting information concerning the cultivation of the licorice plant in the Austrian province of Moravia, where it is conducted on an extensive scale on the southern declivities of the hills encompassing the Thaja River, in the loose, sandy soil that is equally adapted to grape culture. In fact, the two crops are periodically alternated in some sections. The fields are planted with sections of runners about the thickness of a finger and 30 Cm. in length, in a slanting or horizontal position, about ½ M. apart and to a depth of about 30 Cm., and then covered with soil. The plantation is then left practically without attention for four years, the time required for the maturing of the crop; the only attention given being the occasional loosening of the soil, and the removal of weeds or of unhealthy plants. During the first years the plants only produce thin switches, which in the following years, however, develop into strong densely foliated stems and reach their maturity in the fourth year, when the crop of licorice root is collected. From the root-stocks and the runners remaining in the ground, new plants are then produced, reaching as before their maturity in four years, so that crops of roots are obtained in a number of successive periods of four years each, depending on the fertility of the soil, aided at

the beginning of each period with the application of manure, until the soil is practically exhausted. The planting may be done during the first half of April or in the fall of the year; the harvest begins in September and continues until the middle of March. The product, consisting of handsome thick roots and runners, commercially designated as "roots," is light-yellow in transverse section and has a pure sweet taste, while an inferior product, composed of the shoots of the subterraneous stem and small runners, is used for the purpose of making licorice paste, which is also made largely in Moravia from the better "roots."—Pharm. Ztg. LVI (1911), No. 57, 576; from Pharm. Praxis., 1911, No. 6.

Matricaria Discoides, D. C.—Increase of this American Species in Europe.—Schimmel & Co. mention that *Matricaria discoides, D. C.*, a plant resembling German Chamomile, but smaller and particularly differing in having much smaller marginal flowers, has acclimated itself in Europe with surprising rapidity since it was introduced from North America about the middle of the nineteenth century. It is very common, for example, in Würtemberg and in many parts of Alsace-Lorraine, in particular in the neighborhood of railway stations, and has also been observed in the vicinity of Leipzig, where Schimmel & Co. have ecaused a small quantity to be collected for distilling purposes. From the entire plant, all parts of which appear to contain volatile oil, they obtained 0.15% of a dark brown oil, studded with paraffin crystals when at ordinary temperature. Its odor is intermediate between that of common and Roman chamomile oil; sp. gr. at 30°, 0.9175; acid val., 18.7; ester val., 77.5. On account of its fairly considerable paraffin-content the oil did not form a clear solution even with 90% alcohol. The separated paraffin, recrystallized twice from dilute alcohol, melted between 58° and 61°.—Schimmel's Rep., Oct., 1911, 107.

Wax Oil.—Composition.—Th. Ekecrantz and E. Lundström have made an interesting investigation to determine the composition of Wax Oil, an obsolete preparation which under the name *Oleum Cerae* was formerly official in many of the European pharmacopœias and is still employed externally as a remedial agent. Practically nothing is known regarding its components, and the little that is published in the literature refers to a product that is obtained by dry distillation either from the beeswax direct or in admixture with indifferent substances—such as sand or brick dust, whereas the commercial wax oil is at the present time always prepared by the dry distillation of the wax with burnt lime. Obviously, the products obtained by the latter method must differ in composition from those obtained by the direct distillation of the wax, and the authors therefore prepared the wax oil for their examination by subjecting beeswax of assured purity to distillation three times, with twice its weight of lime, obtaining thus about 67.5% of a brown-yellow oil, which gradually congealed into a grey-yellow mass, interspersed with crystalline leaflets. This yielded when distilled with steam about 50% of a mobile, yellow-green liquid of sp. gr. 0.7825, having pronouncedly the odor of the wax oil, and consisting of a mixture of saturated hydrocarbons. The portion of the wax oil not volatilized by the steam consisted preponderously of "nonokosan," $C_{29}H_{60}$, which is probably produced by the oxidation of the myricyl alcohol of the wax to the corresponding acid and the subsequent splitting off of carbon dioxide. The valuation of a sample of wax oil may properly depend on the following constants: Specific gravity, 0.790 to 0.792; acid number, between 8 and 12; iodine number, between 80 and 90.—Archiv. d. Phar. 248 (1910), No. 7, 500-513.

Paraldehyde, G. P. V.—Contradictory Requirements.—R. Richter points out that while the new German Pharmacopœia admits the presence of 4% of acetaldehyde in paraldehyde, which must be otherwise free from contaminants, the constants and tests given apply to pure paraldehyde. Thus, the specific gravity at 15° is given at 0.998-1000, the boiling point at 123°-125°, while the congealing point has been lowered (from the M. P. 10.5 given in the G. P. IV) to 6.5°. The author finds, however, that otherwise pure paraldehyde, containing 4% of acetaldehyde, has a sp. gr. at 15° of 0.993, this being due to the much lower specific gravity (0.7876) of the contaminant; and that, although the congealing point of such a mixture is 6.50, on distillation about 54% distil over before the temperature has risen to 122.7°, the remainder (46%) passing over between 122.7° and 124.2°. It is somewhat problematical whether it is the pharmacopœial intent that paraldehyde *shall* or that it *may* contain 4% of acetaldehyde; but the author can see no reason for its presence, since it can easily be

removed from the commercial product by fractionation. Indeed, he is of the opinion that its presence is liable to produce untoward by-effects, this opinion being warranted by his experience in the treatment of the insane with paraldehyde in a prominent German asylum. He therefore concludes that acetaldehyde should be excluded from paraldehyde as far as possible by observing the following requirements: 1. Specific gravity as high as possible, preferably within the limits of the G. P. V. 2. Boiling point conforming practically with the G. P. V. 3. Congealing point from 10°-12°. 4. Quantitative determination of *metaldehyde,* which is always liable to be formed during the spontaneous conversion of paraldehyde into acetaldehyde. This is accomplished by evaporating 10 Gm. of the paraldehyde at a low temperature. In all other respects the tests of the G P. V. will suffice.—Pharm. Ztg. LVI (1911), No. 53, 536-538.

Cantharidin.—Quantitative Determination in Cantharides and the Tincture.—The "Hagen-Buchholz Prize" of 1909-10 for the best essay on the subject of "A Comparative Examination of the Methods which have been proposed for the estimation of free and combined cantharidin in Cantharides and Tincture of Cantharides," has been awarded by the German Apothecaries Society to three papers, contributed by A. Kneip, N. Ney and F. Reimers, respectively, a symposium of which is published in the Archiv. der Pharmazie. From this, it appears that by experimentation with the various published processes, as well by processes of their own these three authors have reached results which differ very decidedly from each other. Ney recommends the method of Panchaud as modified by Siegfried, with some modifications of his own, and Reimers recommends the method of the Pharm. Germ. as modified by Fromme. Both of these methods depend on the use of chloroform for the extraction of the cantharidin after certain preliminary treatment with acids—the one sulphuric, the other hydrochloric acid. Kneip, on the other hand, recommends a method of his own, in which, after acidification of the powdered cantharides with alcoholic hydrochloric acid (25% HCl), they are extracted with a mixture of 30 parts of petroleum ether and 50 parts of benzol. Both Kneip and Reimers also determined the water-content in the drug and the ash (found by Kneip to be 7.45-11.58% and 5.54-6.99%, respectively), and Reimers also determined the percentage of fat in the sample. The results obtained by the three authors are exhibited in the following:

	Ney	Kneip
Total Cantharidin	0.885%	0.918%
Free Cantharidin	0.580%	0.730%
Combined Cantharidin....	0.305%	0.188%

	Reimers (3 Samples)		
Total Cantharadin	0.878%	0.889%	0.809%

For the details of these highly interesting papers (and the various processes experimented with) the original "symposium" must be consulted in Arch. d. Pharm *249* (1911), No. 4, 259-285.

Tincture of Cantharides.—Quantitative Estimation of Cantharidin.—Dr. R. Gaze recommends the following method for the quantitative estimation of Cantharidin in Tincture of Cantharides: 50 Cc. of the tincture, 25 Cc. of water and 1 Cc. of solution of sodium carbonate (1:2), are evaporated to dryness on a water bath; the residue is dissolved in 10 Cc. of water, 2 Cc. of hydrochloric acid (25%) are added, and the mixture is transferred and rinsed into a separatory funnel, in which it is shaken out consecutively with 10, 5, 5 and 5 Cc. of chloroform. The chloroformic solution and washings are evaporated to dryness in the flask in which they have been collected, on a water bath, and finally with the aid of a bellows, and after standing twelve hours the dry residue is washed consecutively with 10, 5, 5, 5 and 5 Cc. of petroleum ether, the fractions being decanted through a small filter. The washed contents of the flask and the filter are allowed to become air-dry, then washed first with 10 Cc. of water containing one drop of ammonium carbonate solution, followed by pure water—and dried at 50° C. The residue in the flask is now dissolved in a little acetone, the solution filtered through the washed and dried filter into a weighing flask, the flask and filter being washed quantitatively with sufficient acetone. The acetone solution is evaporated at a gentle heat, finally with the aid of bellows, and the brownish-yellow residue in the weighing flask is then heated at 50° in the water-oven to constant weight.

The method under certain preliminary modifications is also applicable to the determination of Cantharidin in "Oleum Cantharidum," but the details must be consulted in the origi-

nal paper.—Apoth. Ztg. XXVI (1911), No. 34, 332-333.

Extracts of Belladonna and Hyoscyamus.—Superiority of the Alcoholic Extract from the Dried Drugs.—The new German Pharmacopœia (V) having, in conformity with the "Protocol" adopted by the International Pharmaceutical Congress at Brussels, dismissed the extracts of belladonna and hyoscyamus prepared from the fresh plants and replaced them with extracts prepared from the dried leaves of the plants, by percolation with 70% alcohol, P. W. Danckworth has made a series of experiments in order to ascertain the relative value of the two methods of preparation, as well as the advantage, if any, of using only the leaves instead of the whole herbaceous portion. Extracts were accordingly prepared from fresh herb and leaves by the process of the G. P. IV, and from the dried herb and leaves by process of percolation directed in the "Brussels Protocol," the material being of the identical harvest, and the resulting extracts adjusted so as to retain 15% of water. Referring to the original paper for the details of these experiments, the result in the case of *Belladonna* may be condensed as follows:

1. The leaves contain less alkaloid than the entire herb.

2. By percolation of the dried drug with 70% alcohol the yield of extract is not only larger, but the alkaloidal content is also greater than in the extract made from the fresh drug.

3. The extract obtained by percolation from the dried herb contains more alkaloid than that obtained from the dried leaves, but the yield of extract from the leaves is greater.

4. The international requirement that the extract shall retain only 10% of water should be changed to 15%.

It is of practical interest that the yields of extract, containing 15% of water, when calculated for the fresh herb and leaves respectively, was as follows:

Herb: Fresh, 1.88% (=1.699% alkaloid); dried, 3.97% (=1.917% alkaloid).

Leaves: Fresh, 2,02 (=1.207% alkaloid); dried, 5.38% (=1.282% alkaloid).

The actual yield from the dried material was: From herb, 31.30%; from leaves, 29.88%. If the chlorophll is filtered out after distilling the alcohol from the percolate, these quantities are reduced to 26.6% and 25.55% respectively, the percentage of alkaloid being correspondingly increased.

Similar results were obtained with Hyoscyamus leaves and herb, but these were confined to a single specimen each of the herb and dried leaves.—Arch. d. Pharm. *249* (1911), No. 4, 247-253.

ENTHUSIASM.

Enthusiasm is that life spark that comes into vital contact with the hearts of men and which influences them in a way that promotes the greatest activity and devotion to a cause.

Cold, perfunctory work, no matter how intrinsically valuable, fails to obtain the psychological results that are so important in carrying any movement or project through to success, especially if either are dependent for success upon the united action and support of any considerable body of men.

In N. A. R. D. work enthusiasm has been the cement that has bound leader to leader and worker to worker and has imbued the N. A. R. D. gospel with the fervor of trade and professional philosophy and religion, making it a cause worth planning for, fighting for and sacrificing for.

When we look around us we find that successful business establishments are alive with enthusiasm and are working to achieve certain business ideals. Principle is the foundation of their enthusiasm and activity.—*N. A. R. D. Notes.*