

by titration with tenth-normal sodium hydroxide solution using the hydrogen electrode and a calomel cell (normal potassium chloride solution) corresponds to not less than 14.5 per cent nor more than 15 per cent of hydrogen chloride, when calculated to the dried substance.

SUMMARY.

1. Comparative chemical analyses were made of the two different brands of phenylazo- α - α -diaminopyridine hydrochloride appearing under different proprietary names.

2. Crystallographic examinations indicated: (1) that the second specimen of Pyridium was of a purer quality than the first one; (2) that all specimens appeared to contain a relatively small amount of an impurity; (3) that the second specimen of Pyridium and the specimen of Mallophene were essentially the same quality.

3. Both products contained varying amounts of moisture.

4. The p_H curves of the electrometric titrations proved to be a good criterion in the determination of the identity and purity of the compound. Furthermore, the electrometric titration demonstrates that when the hydrogen chloride was given off on exposure at 100° C., it was only the small quantity in excess of the stoichiometrical amount for a monohydrochloride.

5. The results obtained indicate a slight difference in purity; the Mallinckrodt product contained an excess of hydrogen chloride. The product of Merck & Co., Inc., was satisfactory in hydrogen chloride content but ran high in nitrogen content, indicating probably an impurity, such as an amide, which was not completely removed in the process of manufacture. On the whole, however, it was sufficiently pure for a product of this character.

6. The specimens of Mallophene and Pyridium examined contained essentially the same chemical compound.

7. Standards for phenylazo- α - α -diaminopyridine hydrochloride have been prepared, based on the work herein reported.

FLUECKIGERIANA.

BY EDWARD KREMERS.

V. Flueckiger letters to Power, 1882-1890.

(Continued from p. 253.)

Strassburg, Feb. 7, 1886.

MY DEAR FRIEND,

I am pleased with your good news of Jan. 19th and may say that I have already written long ago to the Berlin publisher, Mr. Springer, on account of the translation of the "Grundlagen" (1). So Messrs. Wood & Co. may fairly apply to him for the clichés (2).

As to the "Pharmaceutische Chemie" I have done with the first part, which as you will be well aware is by far the more difficult; so I hope to finish the work toward the end of this year or at least in the very first weeks of 1887. To give the preference to Messrs. Wood for the translation of the Pharm. Chemie I have no objection, still I suppose they will pay the translator. I believe it would be possible to obtain this.

Dr. Tschirch must be styled Lecturer of Botany and Materia medica in the University of Berlin, for he is simply "Privatdocent" (3) and not yet a professor.

Ptychods means a fold; Ptychodeschlauch may best be given as protoplasms retiring in folds or being reduced into folds along the inner surface of the cell wall. I am not aware of any English term exactly corresponding with the dreadful word Ptychodesschlauch, which—on the whole—might as well be omitted by you.

As to additions or corrections to the "Grundlagen" there is, as yet, nothing of much interest. At page 80 you should drop, in the last line, Glandulae Lupuli, for they are by no means unicellular (einzellig). This is a mistake; it would be safe to omit all the 4 lines from "Manche Drogen freilich . . ." to "sind einzellig."

When your letter arrived, I was just very much pleased with Dr. Squibb's visit; he stated that Messrs. Wood & Co. made an excellent business in publishing the Pharmacopœia (4). So they should liberally treat you.

I hope you will continue in the new year in the same prosperous way as shown by your first "Contributions" (5) for the benefit of Pharmacy in your country. As to Germany and especially to Strassburg, nothing new is to be mentioned. In my pamphlet, "Der Pharmaceutische Unterricht in Deutschland," which I believe to have sent you (reprint from the Archiv der Pharmacie) (6) I showed how things should be arranged in my opinion. But nobody cares about it (7). So I continue quietly my work which, as you know, is very little appreciated by my colleagues Messrs. DeBary (8) and Fittig (9), who would rather like to see me leave my post. This I shall do, but at my time; I shall do my best so long as I can.

With kindest regards—Mrs. Flueckiger uniting in them, I remain

Yours very truly,

F. A. FLUECKIGER.

(1) These are the "Grundlagen der Pharmacognosie," a joint publication by Flueckiger and Tschirch of the year 1885, the translation of which had been proposed by Power in a previous letter. See Flueckiger's letter dated Sept. 16th, 1885. Also footnote No. 3, THIS JOURNAL, page 8.

(2) Cuts.

(3) As Flueckiger states, Tschirch was at that time "Privatdocent fuer Botanik und Materia Medica" at the University of Berlin. Power had apparently proposed to translate the German title with the English "professor," whereas Flueckiger proposes the designation "lecturer." American university terminology has no exact equivalent. In speaking of the German "Privatdocent," the American college man commonly uses the term "docent," since the designation lecturer, as proposed by Flueckiger, has a different meaning in our academic parlance.

(4) The U. S. P. revision of 1880 was the first one of the new régime in pharmacopœial revision with Dr. Rice as Chm. of the Revision Committee. It was Dr. Squibb who had started the ball a rolling, but had refused to have anything to do with the new scheme. It was from this time on that the U. S. P. became truly the national standard through its adoption by the several state pharmacy laws, the enactment of which became popular at about the same time. With the sale of an unprecedentedly large number of copies, therefore, the publication of the U. S. P. became sought by publishers. However, Prof. Flueckiger's logic was not that of the American business man.

(5) Flueckiger here has reference to the "Contributions from the Department of Pharmacy," published by Power in 1885. It was a pamphlet of 81 pages and consisted principally of the theses of the first pharmacy class which had graduated in 1885. In addition there were two papers by Professor Power himself.

(6) *Arch. d. Pharm.*, 223 (1885), 321 to 348.

(7) This was also Tschirch's complaint at Berlin. As was seen (footnote No. 3) pharmacy was represented at the largest of the German universities by a "Privatdocent." Disgusted, Tschirch left in 1890. Somewhat later Thoms tried again and in 1903 gained his point when the Pharmaceutisches Institut was established at Dahlem next to the Botanical Garden.

(8) DeBary was Professor of Botany.

(9) Fittig was Professor of Chemistry.

PSYLLIUM SEED PRODUCTION IN INDIA.

Three species of *Plantago*, known collectively as Spogel Seed, are familiar to Indian drug dealers: *Plantago Ispagula*, *P. Orata*, *Plantago Lanceolata* and *Plantago Major*, *P. Syllium* or *P. Asiatica*. The last is probably best known as the Indian variety of *Plantago* and is the most widely distributed, being found in Kashmir, Assam, Bhuttan, Bombay and Nilgris. The plants grow best in a dry sandy clay soil and the seeds are ready for harvest in April and May. The plants, including roots, are pulled from the ground and hand-threshed by beating them against a frame of slender wooden rods. Seeds are available for export by July or August. Amritsar is the leading market, although Lahore and Karachi also share in the trade. Prices fluctuate between \$3.65 and \$4.45 per maund of 82½ pounds. Shipments are made in double gunny sacks holding about 168 pounds. (Assistant Trade Commissioner Paul L. Hopper, Calcutta.)