

A COMPARISON OF DRUGS AND PHARMACEUTICAL PREPARATIONS
USED IN 1880 AND 1930.*¹BY WILLIAM M. FLEMING AND RALPH W. CLARK.²

The object of this paper is to make a comparison of drugs and pharmaceutical preparations used in 1880 and 1930. It takes up those products official in the United States Pharmacopœias of 1880, 6th revision, and 1930, 11th revision, and those preparations manufactured by Parke, Davis & Company in 1883 and 1934—1935.³ Hereafter the United States Pharmacopœias will be abbreviated as U. S. P. VI and U. S. P. XI.

In the tabulation of products official in the U. S. P. VI and U. S. P. XI, as well as in the price books of Parke, Davis & Company for corresponding years, many interesting observations can be made. No attempt is made in this discussion to point out all changes indicated by the tabulations, but only those which are outstanding. Many others may easily be noted from the tabulations themselves, which are too long to be presented here.

Abstracts appeared in the U. S. P. VI in eleven different products, and were cast aside entirely in the U. S. P. XI. On the other hand, such organic synthetic preparations as acetanilid, acetone, chloroform and chlorobutanol and many others are found in the more recent U. S. P. but were absent in the earlier U. S. P. Acetylsalicylic acid, a product well-known to every one to-day, was missing from the U. S. P. VI.

Three antitoxins, three barbiturates, ephedrine, epinephrine and saccharin are some of the pharmaceutical products of the U. S. P. XI which had not gained sufficient prominence or recognition when the U. S. P. VI was being prepared to be included in it.

In general, it may be said that representatives in various modes of administration have been decreased as far as official recognition is concerned over the period of fifty years, and some forms have completely disappeared.

Plasters were represented a half century ago by seventeen separate items, while the U. S. P. XI includes only four; extracts dropped from thirty-two preparations to twelve official to-day; seventy-nine fluidextracts were official in the 1880 revision and only eleven are official now; iron compounds numbered twenty-three, while now only five remain; liniments dropped from ten to four in number and specific infusions have been completely omitted from the U. S. P. XI. The five lithium products of the U. S. P. VI are now unofficial; mixtures appeared officially eleven times in 1880, while now only two are official; oleoresins lost five items leaving only one, and pills which were official in 1880 as fifteen different preparations, now are only official as two. Syrups dropped from thirty-four prepara-

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tions in the U. S. P. VI to fourteen in the U. S. P. XI, and tinctures lost forty-three products between 1880 and 1930, leaving thirty now official. Troches are extinct as official preparations but appeared sixteen times officially in 1880. Official ointments have decreased ten in number to the present sixteen and the fourteen wines of the U. S. P. VI are now unofficial. On the other hand, toxins, antitoxins, serums, emulsions and tablets have all become official since 1880.

Approximately ten per cent of the preparations which were official in the U. S. P. VI have found their way to the National Formulary, 6th edition, and thirty-one per cent of the products which were official then are still found in the U. S. P. XI. The number of drugs and preparations in the U. S. P. VI has been decreased in the U. S. P. XI by nearly fifty per cent. Approximately thirty-two per cent of the official products in the earlier book have been declared of not sufficient value or pharmaceutical usefulness to be official. Two hundred and fifty-four new products have become official in the U. S. P. in the interim between 1880 and 1930.

In comparing products, both official and not official, but manufactured by commercial houses, a tabulation was made showing the types of preparations, with the respective number of preparations of each class, made in 1883 as against those of 1934-1935, as the nearest corresponding dates when catalogs were available. This tabulation tends to show the trend in use of various types of pharmaceutical products. The products of Parke, Davis & Company were used for this study as this was one of the largest pharmaceutical houses in the United States in 1880 and consequently its products would show the most accurate comparison of these products over the fifty-year period.

In 1883, Parke, Davis & Company manufactured sixty-seven concentrations and to-day only six. Medicinal elixirs have dropped from 147 to seventy-two, and fluidextracts underwent a landslide from 503 products in 1883 to 140 at present. Solid extracts dropped from 117 down to only ten, which are marketed to-day. The Parke, Davis & Company catalog of 1883 showed a stock of 379 herbs, leaves, barks and flowers, while the 1934-1935 catalog lists only thirty-six. In 1883, this Company manufactured no liniments, emplets, solutions, spirits or mixtures. The earlier list of pills included 571 varieties, while to-day it numbers only 103. Tablets were not manufactured by the Company in 1883, but 502 different ones are listed in the more recent catalog. Medicinal wines dropped from twenty-two to four at present, and lozenges from eighty-two to nine. Eighty-three different granules were listed in 1883, while now they are entirely absent from the price list. The 1883 catalog also showed fourteen other classifications which are absent from the new edition; among them such modes of administration as oleates, plasters, glyceroles and cerates; on the other hand, the new edition shows such preparations as diagnostic extracts, biologicals, laboratory diagnostic agents, protein extracts and phylacogens, which were foreign to the early catalog.

Parke, Davis & Company listed somewhat over 2500 different products in the catalog of 1883. The present list has been reduced to slightly over 2000 products. However, only about one-third of the originals are manufactured to-day, which means that the market has been supplied with newer products just about as fast as the old ones became obsolete.

Another interesting approach in the comparison of these Parke, Davis &

Company products is from the price angle, which on the whole indicates a general rise in prices, some definitely more abruptly so than others.

Three classes of preparations were selected for this comparison which were in considerable demand in 1883 and have remained so through 1934-1935, so that a fair comparison could be made. Tinctures, medicinal syrups and powdered extracts are the three classes compared. The tabulation also shows products dropped in these classes and new ones added in the course of the fifty-year period. There were sixteen powdered extracts, fourteen medicinal syrups and six tinctures that survived the half century of manufacturing.

Powdered extracts that have more than doubled in price since 1883 are as follows (the prices figured per ounce): Colocynth compound, 30 cents to 70 cents; digitalis, 40 cents to \$1.20; ergot, 80 cents to \$2.00; hydrastis, 50 cents to \$3.50; hyoscyamus, 45 cents to \$1.00; opium, \$2.00 to \$10.00; and valerian, 40 cents to \$1.20. Ox gall remained at 45 cents per ounce during the entire period.

Among the syrups that underwent a considerable price change are (prices figured per gallon): Calcium iodide, \$9.00 to \$24.00; Dover's powder, \$9.00 to \$16.00; ipecac, \$5.50 to \$12.00; rhubarb and potassium compound, \$7.00 to \$23.20; sarsaparilla, \$4.50 to \$12.00; and squill compound, \$5.50 to \$12.00. However, syrup of calcium lactophosphate remained at \$8.00 for the fifty years, and syrup of wild cherry did the unusual by dropping in price from \$5.50 to \$2.50 per gallon.

The bromides, mentholated compounds and white pine preparations are all known and largely used syrups that were not included in the 1883 price catalog.

Tinctures, the third class of Parke, Davis & Company preparations compared in this manner, show probably the most regular ascension in price, with very few abrupt or outstanding rises. In fact, five of the six tinctures that were marketed both in 1883 and 1934-1935 were priced at \$2.50 per pint and the sixth preparation, Warburg's tincture, showed one of the only two decreases in price of all those products compared in the three classes, by going from \$5.50 in 1883 to \$3.80 in 1934-1935. The greatest fluctuation in price was evidenced in tincture of digitalis, which sold for \$2.25 per pint in 1883 and rose to \$3.40 per pint in 1934-1935. The tinctures show a definite increase in number listed now over those manufactured in 1883.

In a general examination of this work, two particularly outstanding factors are brought to light, the first being that prices for pharmaceutical preparations have, on the average, doubled, and that approximately two-thirds of the products in use in 1883 have now become obsolete as far as manufacture or use is concerned. This latter fact was indicated in both the survey of official preparations and those manufactured by Parke, Davis & Company.

It was interesting to note that the survey of the Parke, Davis & Company products listed in the catalog of 1883 and 1934-1935 showed to be about the same, but that approximately two-thirds of the original drugs or pharmaceutical preparations that have been abandoned have been replaced by new preparations, which means that pharmaceutical research, publicity and demand have, in the last fifty years, played an important rôle in human medication.