

Pharmacy Week, first suggested at the annual meeting of this ASSOCIATION in 1924, was inaugurated in 1925. It is one of the most valuable accomplishments in the history of American pharmacy. Pharmacy Week has become a powerful influence. The benefits which have been felt as a result of the observance of Pharmacy Week have been manifold. Not only is all organized pharmacy in the United States firmly behind the Pharmacy Week movement but it has spread to Canada, Great Britain, South Africa, Australia, New Zealand and Tasmania. East to the Antipodes—west to the Antipodes—until the message of pharmacy echoes around the entire world, this Pharmacy Week movement is observed in all of the English-speaking countries. Pharmacists in Spain, Germany, France, the West Indies and Central and South America are becoming interested in this great Movement for public understanding of the pharmacist and the rôle which he plays in the interest of public health conservation.

As one single feature of the observance of Pharmacy Week, one newspaper syndicate ran full-page spreads in twenty-eight metropolitan newspapers throughout the nation. These twenty-eight papers have twenty-two million readers who will become pharmacy conscious. When before in the history of American pharmacy has any undertaking, movement or event so forcefully championed the cause of pharmacy?

Such agencies as the Committee on Education and Research of the National Wholesale Druggists' Association, Drug Trade Conference and Drug Trade Bureau of Public Information have contributed much to prove the progress in pharmacy of the past decade.

Surely we can say that pharmaceutical history is being made and in looking ahead in contemplation of the future of our profession, can we not consider it with enthusiastic optimism?

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## A SURVEY AND CRITICISM OF PRESCRIPTION SYNTHETICS.

BY J. L. KLOTZ.\*

The use of the modern synthetics in prescription dates back to the discovery of the therapeutic action of antipyrine by Knorr in 1884. This discovery and those following were, however, presaged by Wöhler's famous synthesis of urea in 1828. At the present time there are several hundred more or less common synthetics in prescription usage, only a small percentage of which are official in the U. S. P. X, although the separate ingredients of many of them are official.

The remarkable success achieved by many of these synthetic drugs is due to several factors, *viz.*: (1) forceful advertising on the part of the manufacturers, (2) constant composition as opposed to deterioration in preparations of crude drugs, (3) certain combinations of therapeutic action can be combined in any one synthetic which would require several different combinations of crude drug preparations to produce the same effect, (4) definiteness of desired action without undesirable by-effects.

Of the above factors contributing to the success of this type of compound the only one of questionable merit is that of "Forceful advertising by the manufac-

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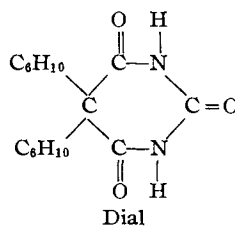
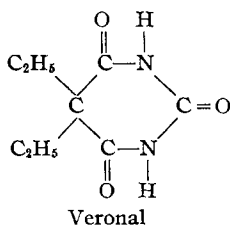
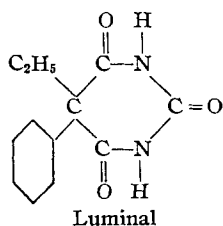
turer." Although advertising plays an important part in the dissemination of knowledge, it has in this particular field, led to two undesirable situations, viz.: Forcing the pharmacist to stock several brands of the same chemical substance to meet the demands of the physicians, and popularizing inferior therapeutic agents.

In order to determine the frequency of synthetics in prescription practice and to find those classes in which the greatest duplication occurs a survey was conducted comprising a total of 3400 non-narcotic prescriptions. A tabulation follows:

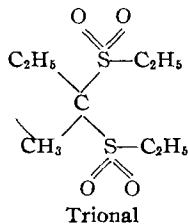
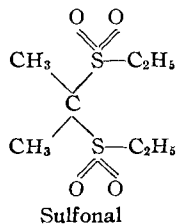
Total prescriptions.....	3400				
Total synthetics.....	1714				
<i>Antipyretics.</i>			<i>Anti-rheumatics and uric acid eliminants.</i>		
Name.	Times prescribed.	Per cent of total synthetics.	Salicin	60	3.50
Phenacetin	194	11.3	Atophan	52	3.00
Aspirin	152	8.86	Methyl salicylate	14	0.81
Quinine	104	6.00	Piperazine	2	0.11
Salophen	52	3.00	Total	128	7.42
Pyramidon	48	2.80	<i>Intestinal antiseptics and disinfectants.</i>		
Antipyrine	24	1.40	Camphor	54	3.15
Acetanilid	16	0.93	Salol	42	2.45
Novaspirin	4	0.22	Total	96	5.60
Phenalgine	2	0.11	<i>Diuretics.</i>		
Total	596	34.62	Citrated caffeine	68	3.96
<i>Antiseptics and disinfectants.</i>			Diuretin	14	0.81
Phenol	124	7.23	Total	82	4.77
Salicylic acid	34	1.98	<i>Anti-neuralgic (external).</i>		
Benzoic acid	32	1.86	Menthol	56	3.26
Resorcin	26	1.50	Total	56	3.26
Aristol	14	0.81	<i>Anesthetics (local and general).</i>		
Chlorazene	10	0.58	Chloretone	28	1.63
Betanaphthol	6	0.35	Chloroform	14	0.81
Chinosol	4	0.22	Novocaine	6	0.35
Total	250	14.53	Holocaine	4	0.22
<i>Hypnotics and sedatives.</i>			Anæsthesin	4	0.22
Luminal	54	3.15	Total	56	3.23
Allonal	30	1.75	<i>Miscellaneous.</i>		
Veronal	30	1.75	Oxyl iodide	24	1.40
Chloral hydrate	24	1.40	Calcidine	18	1.05
Dial	14	0.81	Silosan	14	0.81
Trional	10	0.58	Cresatine	12	0.70
Sulfonal	6	0.35	Acriflavine	12	0.70
Paraldehyde	6	0.35	Phenolphthalein	12	0.70
Total	174	10.14	Anasarcin	4	0.22
<i>Cardiac stimulants.</i>			Tannalbin	4	0.22
Ephedrine	156	9.10	Ichthalbin	4	0.22
Adrenalin	10	0.58	Theominal	2	0.11
Total	166	9.68	Formamint	2	0.11
			Total	108	6.24

From the above results it will be seen that the most popular class of prescription synthetics is that of the antipyretics. Following in the order named are the antiseptics, hyponotics, cardiac stimulants, uric acid eliminants, intestinal antiseptics, diuretics, anti-neuralgics and anæsthetics. The ten most popular individual synthetics in the order named are: Phenacetin, ephedrine, aspirin, phenol, quinine, citrated caffeine, salicin, menthol, luminal and camphor. All groups with the exception of isolated individual instances demonstrate "Definiteness of desired action without undesirable bye-effects," "Valuable combinations of therapeutic action," and "Constant composition as opposed to deterioration," while in most instances a definite relationship can be discerned between "Forceful advertising" and the relative popularity of the synthetic.

The best examples of the disadvantages attributed to "Forceful advertising" are to be found among the antipyretics and the hypnotics. In these two classes alone, the pharmacist is compelled to stock a total of seventeen compounds, only a third of which are actually necessary to attain any desired therapeutic effect. Chloral hydrate represents nearly 1.5 per cent of all synthetics prescribed despite the fact that it is a gastric irritant and injurious to the heart. Luminal, veronal and dial differ no more in pharmacological action than in chemical structure:



Similarly, sulfonal and trional are subject to the same criticism:



Aspirin and novaspirin differ principally in the extent of their exploitation and acetanilid represents nearly 1 per cent of all synthetics despite the fact that recent researches<sup>1</sup> have shown it to be quite toxic.

The antiseptics show a heavy preponderance in favor of phenol although Harrington<sup>2</sup> has shown the danger of gangrene formation when it is applied to injured fingers or hands. The popularity of aristol, however, has undoubtedly decreased because of the now generally accepted theory of its low antiseptic power. The absence of the newer compounds such as chloramine-T, etc., although surprising, is probably best explained by the increasing tendency of the laity to purchase highly advertised proprietaries.

<sup>1</sup> Autenreith, "Detection of Poisons," Ed. VI (1928), page 122.

<sup>2</sup> *American Journal of Medical Science*, CXX, page 1.

In the group of cardiac stimulants the frequency with which ephedrine is prescribed is probably due more to its action on mucous membrane than to its effect on the heart. It has become a very valuable ingredient of nasal sprays and similar preparations intended to allay irritation.

Although camphor leads the group of intestinal antiseptics it is used for so many diverse purposes that salol may in reality be considered the most popular member of this group.

Among the group of diuretics, citrated caffeine owes its popularity largely to its common use along with the antipyretics to aid in elimination. Diuretin, the only other compound of this class commonly prescribed, is very similar in action being a theobromine derivative related closely to caffeine.

Menthol being a compound similar to camphor in respect to its numerous uses renders any attempt to place it in the group of antineuralgics inaccurate. Thus the high percentage of total synthetics which it represents is not a fair indication of the prevalence of this group.

The best examples of synthetics offering specialized therapeutic action are to be found in the group of anæsthetics. Chloretone is an excellent local sedative and anæsthetic for general internal and external use; chloroform is a common agent for the alleviation of bronchial and throat irritation; novocaine offers every advantage in dental anæsthesia; holocaine is an excellent anæsthetic in ophthalmic surgery; and anæsthesin is widely used as a dusting powder for painful wounds. Little or no duplication is to be found in this group which offers a good example of the value of modern synthetics to prescription practice.

There is no apparent reason for the absence of such popular synthetics as urotropin, salvarsan and adalin although the infrequency of synthetic laxatives is best accounted for by the highly advertised proprietaries and the confidence of the public in the old-fashioned preparations.

#### SUMMARY.

- (1) Survey of 3400 prescriptions completed.
- (2) Synthetics classified as to frequency of occurrence.
- (3) Criticism of duplication of antipyretics and hypnotics.
- (4) Advantages and disadvantages of several factors in the success of synthetics discussed.

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### THE STATUS OF OFFICIAL AND NONOFFICIAL PREPARATIONS IN PRESCRIPTION PRACTICE.

BY WALTER D. STROTHER.\*

In 1927 Charters<sup>1</sup> published the results of a survey of pharmacy in the United States. Among many other facts studied and analyzed, he and his co-workers read over seventeen thousand physicians' prescriptions. In this report he gives a complete list of every preparation used in compounding these prescriptions. The survey covered various business centers in the United States so the results represent fairly accurately just what drugs were in use at that time. In addition to the name, the number of times each preparation occurred was tabulated.

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<sup>1</sup> "Basic Material for a Pharmaceutical Curriculum."