OSLER'S PRESCRIPTIONS
AND MATERIA MEDICA

The present study is a result of a happy concatenation of three circumstances. Firstly, I had the good fortune to be a member of the last class (the class of 1906) at the Johns Hopkins Medical School which studied under the late William Osler. Secondly, until the retirement of Prof. John J. Abel in 1932, I was for many years a lecturer in pharmacology at the Johns Hopkins Medical School; and in that capacity I not only lectured on pharmacodynamics but gave a separate course of lectures on pharmacotherapy and prescription writing. Thirdly, I have been connected with the firm of Hynson, Westcott & Dunning for almost ten years as director of pharmacological and medical research; and in that capacity I have had an opportunity to study the prescription files of the retail department there. The retail department of this corporation is well known as one of the most ethical and scientific pharmacies in the country, and in its files can be found prescriptions written by the most eminent American physicians.

In as much as I have always been interested in the development of prescription writing, I have made a careful study of literally tens of thousands of prescriptions in the old files of this pharmacy and analyzed them in respect to their form; that is, grammar, spelling, use of Latin, etc.; in respect to their pharmaceutical accuracy as to materia medica, dosage, incompatibilities, etc.; and also in respect to their rationale. This investigation, which I hope to publish later, led to a discovery of special interest. As I systematically perused the files of prescriptions I came occasionally upon a prescription written by Doctor Osler. It is well known that Osler did most of his medical work at the Johns Hopkins Hospital, and that outside its walls he saw but few patients except in consultation. Consequently, very few prescriptions in Osler's own handwriting are in existence. Happened, however, that Osler lived for years on the southwest corner of Charles and Franklin Streets, in Baltimore, directly opposite the pharmacy of Hynson, Westcott & Dunning, then located on the southeast corner of the same intersection. Osler was a frequent visitor at the pharmacy and on friendly terms with the owners and clerks. As a result, whenever he did write what we may call an "extramural" prescription for some patient who visited him at his home office, it was almost invariably filled at the pharmacy of Hynson, Westcott & Dunning. I decided, therefore, to search through the prescription files covering the period of Osler's residence in Baltimore, a period of about eight years, and collect all of his prescriptions for critical study. The result of this research, presented in this paper, is of considerable interest from the standpoint of medical and pharmaceutical history because of the light it throws on Osler's attitude towards drugs and on the subject of so-called therapeutic nihilism.

To celebrate the meeting of the XIIth International Congress of Pharmacology in Montreal from July 24 to July 30 of this year, the Osler Library Newsletter devotes this issue to reprinting a classic article on Osler's attitude to drugs. David I. Macht's essay on "Osler's prescriptions and materia medica", first published in The Transactions of the American Therapeutic Society for 1936, is introduced here by Dr. Theodore Sourkes, an eminent research pharmacist and long-time member of the Library's Board of Curators. Congress participants as well as regular readers of the Newsletter are sure to enjoy this lively refutation of the charge of "therapeutic nihilism" long levelled against Osler.

OSLER AND DRUGS

In the course of his lifetime William Osler was periodically labelled a "therapeutic nihilist". The charge is dealt with by Harvey Cushing, whose life of Osler may well be read not only as outstanding medical biography, but also as fine literature. On the subject of Oslerian materia medica, Cushing presents two aspects. On the one hand, he writes, "Like many other pathologists, he was... imbued with the faculty of most of the drugs in common use" (p. 340), and adds that "his only weak spot was in therapeutics, if a healthy scepticism concerning drugs may be regarded as a weakness" (p. 349). On the other hand, he "was a good therapeutist... and used drugs not empirically, but scientifically" (p. 268).

The basis for the "nihilist" charge was clearly in Osler's requirement that useful drugs have known and specific actions, and that they be offered in prescriptions that ordered single drugs. In a lecture in 1907 at the Philadelphia College of Pharmacy and Sciences Osler is reputed to have recognized only 13 drugs that had significant value in medicine. The accompanying article by David Macht throws considerable light on Osler's preferred therapeutic agents, although the list of commonly prescribed drugs for patients he saw at home extended upwards to fifty.

Osler began his practice contemporaneously with the development of modern pharmacology, in a period when inert or toxic chaff was being separated from therapeutically useful grain. One must conclude that Osler, although not directly involved in scientific therapeutics as practiced in a growing number of medical school laboratories, had grasped the basic principles of the new discipline, thereby deserving Macht's description of him as a "pioneer in rational pharmacology".

-Theodore L. Sourkes


Original pharmacy of Hynson, Westcott & Co. Southeast corner of Charles and Franklin Streets.
Description of Osler’s Prescriptions

Among the 200,000 prescriptions filed in this pharmacy from 1898 to 1906, I found 130 written by Osler. These, carefully separated and analyzed, were found to include one or more prescriptions of fifty different types. It was interesting to note that the great majority of the entire number were single prescriptions; that is, called for but a single ingredient. There were found only ten compound prescriptions; i.e., those calling for a combination of two or more ingredients. Fifty different drugs or chemicals were mentioned in this collection of Osler’s prescriptions. The subjoined Table 1 gives a list of all the drugs prescribed. The numerals following the names of these drugs indicate how often each of the fifty was recommended in the whole series of 130 prescriptions. Most of the drugs were written in ink; only occasionally was one jotted down in pencil. The majority were written on sheets torn from small scratch pads of plain white or buff paper. Rarely did I find one written on a regular prescription blank bearing Osler’s name and address at the top. Most of the prescriptions were signed only with the initials, “W. O.” Osler seldom wrote his name in full. For the most part, his penmanship was quite legible. In nearly every case the whole prescription, except the signature, was written in Latin. The directions for use of the prescribed agent were invariably specified in English. There were few grammatical errors. From the standpoint of Latin materia medica the drugs mentioned were correctly designated. One curious exception to this was a prescription calling for Bland’s pills, described by Osler as Pulvis ferri sulfuratis instead of Carbonatis. For reasons of economy it is impossible to reproduce all the Osler prescriptions I have collected, but I have selected for copying a sufficient number to give an idea of Osler’s style, the type of prescriptions he wrote and the drugs he employed.

Perhaps the most striking feature about this collection is the fact that, in contradiction to so-called compound prescriptions, the great majority were simple prescriptions and recommended only single ingredients. In every case the single ingredient prescribed was a drug the pharmacological properties of which were pretty well known even thirty or forty years ago. Thus, for instance, Osler prescribed nux vomica, the most popular of the Black Band of physicians, (2) digitalis, (3) quinine, (4) mercurial and (5) ether. A glance at his materia medica in our collection (Table 1) reveals that Osler employed each of the Big Five. Of course, any one who has had the good fortune to study under or come in contact with him at the Johns Hopkins Hospital knows very well how enthusiastically and extensively Osler prescribed all five of these drugs.

Another interesting feature may be noted regarding the drugs of Osler’s choice. In 1916, Prof. Victor Robinson, Editor of the Medical Review of Reviews, published a valuable symposium. Basing his query on the well-known statement of Dr. Oliver Wendell Holmes, in the “Autocrat of the Breakfast Table,” that “we could well dispense with most drugs if we would only retain the five big ones in the whole list,” he asked leading American physicians and pharmacologists to select what they considered the five most important drugs in the United States Pharmacopoeia. The majority of answers received by Professor Robinson listed the five most useful and important of all drugs as follows: (1) opium, (2) digitals, (3) quinine, (4) mercury and (5) ether. A glance at his materia medica in our collection (Table 1) reveals that Osler employed each of the Big Five. Of course, any one who has had the good fortune to study under or come in contact with him at the Johns Hopkins Hospital knows very well how enthusiastically and extensively Osler prescribed all five of these drugs.
treatment of cretinism with thyroid preparations; and we are all familiar with the picture, frequently reproduced in textbooks, of the infant whom Osler treated in this way. Figure 7 is an order for thyroid extract written on a regular prescription blank with Osler’s name and address at the top, and signed with his initials.

Discussion

This analysis of our collection of Osler’s prescriptions logically leads to a discussion of his materia medica in general and of the unfortunate sobriquet of “therapeutic nihilist,” often applied to William Osler both by his contemporaries and posterity. Osler’s knowledge of drugs and his use of them certainly lent no support to this term. Even in the comparatively small number of his prescriptions that I have collected fifty different ingredients are mentioned. If we turn the pages of his “Practice of Medicine” (the edition of 1906, which was my textbook when a student), we find that Osler mentions 170 different drugs although he does not recommend all of them. The list includes: (1) drugs acting on the cardiorenal system, (2) purgatives, (3) diuretics, (4) anthelmintics, (5) opiates and other narcotics, (6) antipyretics, (7) tonics, (8) hypnotics, general anesthetics and alcohol, (9) antiseptics, (10) acids and alkalies, (11) powerful alkaloids and other active principles and (12) a large number of miscellaneous drugs, including metallic salts, antitoxins, vaccines, etc.

We can understand why Osler was frequently misnamed “therapeutic nihilist” only when we consider his attitude towards therapeutics and his method of prescribing. Osler invariably preferred to prescribe only such single and specific drugs with the pharmacological action of which he was familiar; in other words, he was a rational pharmacotherapist, in marked contradistinction to the misguided polypharmacists or prescribers of shotgun prescriptions of his own day as well as that of his predecessors and perhaps — of his successors. Figures 8, 9 and 10 illustrate the types of compound prescription Osler wrote. Here we have, first, an order, written in English, for a simple combination of antipyrin and salol; then, a dermatological prescription calling for a lotion containing sulphur, camphor, lime water, rose water and gum arabic; and, finally, an order for a mixture or solution of creasote in glycerin and water. To appreciate this better, we need only compare some of Osler’s prescriptions, reproduced herewith, with the following prescriptions, written not by cheap and obscure practitioners but by some of the leaders of the medical profession in Baltimore — men who were
colleagues of William Osler. A glance at a few of these shotgun prescriptions reveals at once the difference between Osler’s attitude towards pharmacotherapy and that of the majority of physicians of his time. Figure 11 is a prescription written by one of Osler’s distinguished colleagues, which calls for a mixture of quinine hypophosphite, hydrastine, euonymin, strychnine, hydrocyanic acid, bichloride of mercury and arsenious acid. Figure 12, a compound prescription written by another of Osler’s contemporaries, is notable not so much for the number as for the extraordinary character of its ingredients. It is an order for cocaine hydrochloride, extract of cannabis indica, quinine salicylate and acetanilid in capsules for internal administration. Figure 13, a prescription written by a third leading Baltimore practitioner, is an order for a combination even more preposterous from the standpoint of modern pharmacodynamics. This prescription calls for a mixture of opium syrup, fluid extract of belladonna and the juice of hemlock. I could easily reproduce a dozen more such shotgun prescriptions with the number of ingredients ranging from three to fifteen but these will suffice to bring out the difference between the pharmacotherapy of Osler and that which was more prevalent in his time.

It was this reserve and aversion to the prescribing of chemicals or drugs with the action of which he was not thoroughly acquainted that earned Osler the title of “therapeutic nihilist” and this repugnance on his part to irrational concoction containing a multitude of obscure ingredients really marked the beginning of a new era in medicine, the era of modern rational pharmacotherapy. In Osler’s day the status of scientific experimental pharmacodynamics was not yet well developed and little or nothing was known concerning the pharmacological action of drug combinations. For this reason, Osler could not honestly and logically write compound prescriptions or recommend combination of drugs and the simple prescription is therefore predominant in our collection. The same was true of many of his students, particularly of his most eminent pupil and admirer, William Thayer. Dr. Thayer’s prescriptions, well known as models of neatness, simplicity and therapeutic rationalism, were written in the metric system of which he was an ardent advocate.

Thus a study of Osler’s materia medica and prescription writing reveals the fact that he was not a therapeutic nihilist at all. On the contrary, he prescribed a great many drugs and made mention of many more. He was a pioneer in rational pharmacotherapy. However, because in his time pharmacology was only in its infancy Osler realized the inadequacy of the knowledge then prevailing concerning the action of drugs and therefore prescribed only chemical agents the physiological action of which had been sufficiently demonstrated. He detested the irrational vagaries and mystic combinations of polypharmaceutical nature recommended by his contemporaries and it was this trait that set him apart from them as a sort of radical and gave him the unsavory epithet of “therapeutic nihilist.” As a matter of fact, such an attitude was a vital link between the scholasticism of the past and the scientific medicine of the present.

The recent advances in pharmacology cannot be attributed exclusively to the isolation of active principles and a detailed study of the physiological effects of old and new chemicals. Among the greatest discov-
eries of modern medicine must be reck-
oned the findings made concerning the interaction of various pharmacodynamic agents when administered either in combi-
nation with each other, or in immediate
succession, one after the other, and particu-
larly the phenomena of pharmacological
synergism and antagonism. I discussed these
in detail elsewhere (American Druggist, 1934, 90, 46). A study of what has some-
times been termed "the problem of two or
more" in connection with drugs has led to
some of the most valuable contributions of
modern rational pharmacotherapy and is
also of fascinating interest when examined
in detail elsewher e

Eight hundred years ago there lived in
Cairo a great physician, Moses Maim-
onides, who was also regarded by his
temporaries as a sort of therapeutic ni-
hilist. Maimonides believed in Vis Medicatrix
Naturae, or the healing power of
Mother Nature, in properly balanced rest
and exercise, in dietetics, in the beneficial
use of specific drugs, the action of which he un-
derstood. In one of his treatises, he wrote as
follows: Now, most physicians are greatly
in error in that they think that medication
strengthens the health: it weakens and perverts
it: and for this reason hath Aristotie said that
most of the patients who die do so through the
medicines of physicians. When interference of
the physicians is indicated, his task should be
to sustain the strength of the patient and to pro-
mote Nature in her efforts a repair. Most
physicians, however, err in their treatment; in-
stead of endeavoring to assist Nature, they
weaken the body with their prescriptions." In
letter and in spirit his quotation exactly ex-
presses the views on therapeutics held by
Osler eight centuries later. He also asserted
the importance of Vis Medicatrix Naturae, of
hygienic measures, of dietetic therapy, of
properly balanced rest and exercise, of sun-
shine and of the judicious employment of
scientifically studied medicaments. His so-
called therapeutic nihilism was merely
another spelling for therapeutic rationalism
and marked the dawn of modern scientific
pharmacotherapy. Although Maimonides
came to be regarded as the leading physician of
his time and the court physician of Saladin, the
most famous of sultans, and his services
were sought after by Richard the Lion-
hearted, his advanced ideas on materia
denca and the practical employment of
drugs were obscured by the succeeding
dark ages. It is only now that he is regarded
as the leading physician of mediaeval Ara-
bic and Hebrew medicine, and his views on
therapeutics are recognized as marking a
distinct epoch in the history of medicine.
Let us hope that the modern era of rational
therapeutics, ushered in by William Osler,
may not be similarly hampered.

There are sinister powers of darkness,
prejudice, racial hatred, mass hysteria and
exaggerated egotism stalking abroad and,
amazing as it may seem, aspersions are ac-
tually being cast on the value of the
medical contributions of such men as Jen-
nen, Koch, Virchow, Ehrlich, Neisser and
von Behring. I cannot refrain from conclud-
ing with a fervent prayer for more power
to such organizations as The American
Therapeutic Society, which carries on the
teachings and ideals of humanists and sci-
entists of Osler's type.

-David I. Macht

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