

his simple microscopes—of which, it is said, he possessed two hundred and forty-seven. Incidentally, he presented twenty-six of them to the Royal Society, of which he was elected a Fellow in 1680—not because of his generosity, but in recognition of his contribution to science. To him belongs the distinction of being first to give a complete description of the red blood cells (although Swammerdam had anticipated him by a less perfect description), first to discern protozoa, and first to present accurate drawings of bacteria.

Malpighi, generally regarded as the greatest of the earlier microscopists, who gave the first account of the embryology of the chick, relied mainly on the simple instrument, but it was with the compound instrument that he observed the capillary circulation in the lung of the frog and thus confirmed the accuracy of Harvey's contention. It is interesting to recall that Malpighi was born in the year in which Harvey published "De Motu Cordis," and it was not until a few years after Harvey's death that Malpighi saw the blood cells passing through tiny capillary vessels. Although it is commonly believed that Harvey did not use the microscope, D'Arcy Power tells us of a portrait of Harvey in which a bilenticular microscope similar to that designed by Descartes (1637) appears in the background. However much or little use Harvey may have made of the instrument, the conclusive evidence he desired so much was withheld until Malpighi unleashed it in 1660. Of the capillaries Fraser-Harris says: "Harvey made their existence a logical necessity; Malpighi made it a histological certainty."

These are but instances in the early history of microscopy. We may well marvel at the accomplishments of the earlier devotees of the art. It is a far cry from the simple instrument of Kircher to the ultra-microscope of our day. Had instruments comparable to ours been available to these pioneers, we can fancy that they would have produced results which our modern investigators would have difficulty in paralleling. They mastered the general principles of microscope construction, but it was long before they solved the problem of making satisfactory lenses. As has been noted, it is just a hundred years since the elder Lister succeeded in constructing an achromatic lens which marked an improvement of such magnitude that we can scarcely overestimate its importance. Until that improvement had been effected it was quite impossible to go forward either to an unequivocal demonstration of the bacteria and other minute organisms which play so important a part in pathogenesis, or to other revelations which have profoundly influenced our conception of natural processes. We may feel, therefore, that the year 1830 is

one which marked an advance of great significance to Medicine, and should remind ourselves that there is more than one Lister to whom we owe much of our present ability to control sickness and suffering.

## THE CHINESE PHARMACOPŒIA

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The Board of Health of the Nanking Government has prepared a modern pharmacopœia based upon scientific standards. This is in the press and sometime in the near future may be expected to appear for official use. It represents a praiseworthy effort to bring law and order where formerly such was non-existent, except in so far as ancient custom was observed and modern medical institutions strove to sustain the standards of their foreign founders.

A national pharmacopœia will bring definite standards into the Chinese drug market; it will further nationalize the numerous foreign hospitals; and will eventually provide a mechanism whereby the practitioner, the pharmacist, and patient in China may secure reliable materials. Up to the present such has been sustained by foreign firms representing almost every nation of the west, who, though they have introduced good standards, have brought such varying standards that it became essential to introduce one common national standard for China. More important, however, is the implied approval that this pharmacopœia gives to certain reliable modern remedies. China is flooded with proprietary medicines which need to be controlled and checked. The proper establishment of modern medicine on a scientific and legal basis will provide the necessary machinery for the formulation of modern poison laws, reasonable drug tariffs, and modern food and drug acts.

It will be of interest to foreign countries to see how China has brought together the present pharmacopœia. The British Pharmacopœia was translated into Chinese and published under the joint auspices of the London Chamber of Commerce and the British Chamber of Commerce in 1927. It was thought by some that as Japan in 1886, copying the German Pharmacopœia, first started her publication, so the Chinese might freely copy the recent British translation. However, they were unable to follow such an easy procedure, chiefly because the majority of modern practising physicians are Japanese trained, and there are many others trained in America, Germany, and France.

*The National Medical Journal of China, in*

February, 1929, expressed the hope that China might adopt the standards of the proposed International Pharmacopœia and confine itself to the metric system of weights and measures. The latter has been carried out, but with the former ideal proposal still an indefinite quantity, the compilers were compelled to adopt more practical measures, namely, to seek for standards for those drugs in use by modern practitioners. These standards have been largely borrowed from four sources which may be discussed under their respective headings.

*British standards.*—Apart from the numerous well known drugs found in all modern pharmacopœias, the British, in contrast with the American, have retained a greater number of galenical preparations. This quality reflects something of the nature of the practice of medicine in the two countries, the British having retained more of the art of prescribing, while the Americans, in striving for scientific accuracy, have leaned toward therapeutic nihilism. The chief compiler of the new Chinese Pharmacopœia was Mr. Moody Meng, a Major graduate of Bloomsbury Square, London. It was natural that with the numerous medical schools in China founded by British doctors that he should provide these galenical standards which have already come into general use. For example, where America has only 5 official liniments, and Britain has 15, nine have been adopted in the Chinese Pharmacopœia. Syrups of codeine and glucose are taken from the British Pharmacopœia, and the tinctures of cannabis, hydrastis, senega, quininæ ammon., and quillaia.

There are some drugs which represent British practice, such as eucaine, calcium hypophosphite, potassium sulphate, ammoniated citrate of iron, etc., the irrational use of which in some cases the late Professor Cushing deplored, but usage demands satisfactory legal standards, so they have been included.

*American standards.*—The most striking thing from the United States Pharmacopœia is the adoption of the most rigid biological standards for such drugs as aconite, digitalis, adrenalin, insulin, etc. Seeing that China has as yet neither the men nor the laboratories for maintaining these standards, nor the drug manufacturers for producing them, she is dependent for the present entirely upon foreign groups. Young pharmacologists are developing and before long the government is likely to establish its own biological laboratories, for the very fact that long transport and storage are involved makes the need for this greater than otherwise.

There are a number of the newer remedies in the United States Pharmacopœia X which

have been adopted, thereby rescuing such products from commercialization and the patent market. This includes arsphenamine, carbon tetrachloride, cinchophen, dichloramine, neoarsphenamine, phenobarbital, procain, thyroxin, etc.

With the extensive need for bowel remedies in the Far East, there is included albuminis tannas, aspidium, cusso, emetin, granatum, kaolin, etc.

Four serological products are included, antitoxinum diphthericum, antitoxinum tetanicum, T.A.B., and smallpox vaccines, with United States Pharmacopœia standards. The National Epidemic Prevention Bureau at the Temple of Heaven, Peiping, has made excellent progress for several years in manufacturing and standardizing such products. It is to be expected that in this field China will sustain the very best standards.

*German standards.*—The German chemist was responsible for introducing an unusually large number of synthetic remedies into modern medicine. The market is full of hypnotics, local anæsthetics, analgesics and antiseptics. A careful selection of the more important has been made, for many of these preparations have only a transient popularity, and are found not to be superior to other remedies in common use. Alypin, papaverine, and pyramidon have been adopted, together with many others which are now universally used, such as phenacetin and antipyrine. Pure organic compounds occupy the largest place in a modern pharmacopœia; more than 25 per cent of the 670 drugs in the Chinese Pharmacopœia are in this class.

The German tests and descriptions of this class of drug have in many cases been closely copied by the Japanese. So that while British-American standards predominate for the vegetable and animal materia medica and their preparations, the German-Japanese chemical tests are more commonly used. This group retains several compounds usually regarded as chemicals rather than drugs, e.g., oxalic acid, pyrogallie acid, ethyl bromide, bromine, and sodium hydroxide.

The German-Latin names of drugs are frequently different from the Anglo-American names. The titles and text of the Chinese Pharmacopœia are in Chinese, with the addition of both styles of Latin names. Sodium chloride has the English-Latin title of "sodii chloridum", and the German-Japanese Latin title of "natrium chloratum". Potassium chlorate is termed, "potassü chloratum" in the B.P., and "kalium chloricum" in the P.G. It is readily seen how confusing these terms may become for a third party where both sets of terms are in common use. This is not a problem for English-

speaking peoples, so we will not further labour this point, except to indicate how just such complexities have led to the urgent need of a standard Chinese terminology.

*Japanese standards.*—National sentiment has been too strong to allow the Chinese to adopt wholesale the Japanese Pharmacopœia. Even in terminology, where the written character might be the same, there has been no slavish following of Japanese ideas. The Japanese transliterate many Western names and sounds. For such cases as are absolutely necessary the Chinese have made an independent transliteration, though there is the tendency to correlate new terms with old ones, *e.g.*, hyoscyamus may be rendered in character representing the sounds "hai-ou-sai-ah-mu-ssu", or one may adopt the old Chinese term "lang-tang", which is the name for the native plant.

It is of considerable interest to find some 60 drugs included which come from old Chinese materia medica. Practically all of them are already well known; things like camphor have been employed in Western medicine for many decades; and ephedra has received world-wide attention during the last few years. Aloes, benzoin, gamboge, rhubarb, cardomums, ginger,

and star anise are in universal use. In their knowledge and use of such, old and new medicine in China show little difference, though for many years modern druggists have had the erroneous idea that English rhubarb was superior to the best Szechuan product which is regarded so highly in the West, and one repeatedly found institutions buying back from Europe and America these same drugs which had been bought from the Chinese market.

Of greater importance has been the adoption of oriental standards for new species of drugs. These standards are taken for the most part from the Japanese Pharmacopœia, and apply to Chinese senega, gentian, mint, almonds, cantharides, capsicum, cinnamon, etc. These are oriental species of common drugs, which may well conform to a broad international standard when such has been satisfactorily agreed upon. They should not be regarded as a sentimental leaning toward ancient medicine, for it is to be noted that China has not followed the unscientific path of Mexican medicine with its pharmacopœia of over 2,000 headings. The new pharmacopœia contains about 670 drugs closely allied to the four pharmacopœias cited, each of which contains 600 to 800 drugs.

## Men and Books

### THE ELEVENTH EDITION OF OSLER'S TEXTBOOK OF MEDICINE\*

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When a book reaches its eleventh edition one may begin to speculate as to how many more there will be before its life is finished. In the case of Osler's textbook, however, one can hardly think of its ceasing to be. It is not that there are no others as good, as well written, as clear and as orderly; it is that there are no others which are quite the same. Even to a textbook, Osler was able to impart something of his freshness, his directness, and his grasp of the essential, all the things which together made up his unusual personality.

The full series of all these editions is in the Osler Library. His copy of the first edition has many notes and insertions. Amongst the latter is the prospectus of the book, on which he has written "This, thank the Lord, I did not write."

\*The Principles and Practice of Medicine. Originally written by the Late Sir William Osler, Bt., M.D., F.R.S., formerly Fellow of the Royal College of Physicians, London, etc. Eleventh edition revised by Thomas McCrae, M.D., Fellow of the Royal College of Physicians, etc., 1,237 pages, illustrated. Price, \$8.50. New York and London, D. Appleton & Co., 1930.

On the title-page is his own entirely characteristic inscription: "PRIVATE COPY. May all the curses of the good Bishop Ernulphus light on the borrower-and-not-returner or upon the stealer of this book."

Then there is his account of how the book came to be written:

"On several occasions, in Philadelphia, I was asked by Lea Bros. to prepare a work on Diagnosis and had half promised one; indeed I had prepared a couple of chapters, but continually procrastinated on the plea that up to the 40th year a man was fit for better things than text-books. Time went on and as I crossed this date I began to feel that the energy and persistence necessary for the task were lacking. In Sept. 1890 I returned from a four months' trip in Europe, shook myself and towards the end of the month began a work on Practice. I had nearly finished the chapter on Typhoid Fever, when Dr. Granger, Messrs. Appleton's agent, came from N.Y. to ask me to prepare a Text-book on Medicine. We haggled for a few weeks about terms and finally, selling my brains to the Devil, I signed the contract. My intention had been to publish the work myself and have Lippincott or Blakiston (both of whom offered) handle the book, but the bait of a guaranteed circulation of 10,000 copies