

Science and the World of Tomorrow

By Thomas R. Henry
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SINCE the war's end science has been in a somewhat sterile interlude between two eras. The two decades before Pearl Harbor were the most fruitful period in the history of research, with a constantly accelerating tempo. This reached its apotheosis in the war years, especially in the creation of the atomic bomb and the dawn of the age of nuclear energy. Practically all science was concentrated to one end—winning the war. Most of the work was secret. Soldiers stood guard at the gates of laboratories and chemical formulas were discussed only in whispers.

Scientists everywhere came out of the war tired. Many of them have taken a year off to readjust their lives to a peacetime schedule. The result is that there has been relatively little original research for the past 15 months. It is just now getting under way again. This naturally has been reflected in scientific literature. There has hardly been a single book of first-rate significance. On the other hand there has been an enormous increase of interest on the part of the reading public and this has been catered to by many popular science writers. The leading subject has been atomic energy, with numerous attempts to explain what can be revealed of this extremely complex subject in language which will be generally understood by the layman.

Leading Authors On the Atom

Two volumes in particular may be cited, "The Atomic Revolution," by Robert D. Potter and "Atomic Energy in Cosmic and Human Life," by Prof. George Gamow of George Washington University. Few men living are as familiar with the birth of the atomic age as Potter. In January, 1939, he was a member of the news staff of Science Service and at the same time was working on his doctoral dissertation at the Department of Terrestrial Magnetism of the Carnegie Institution of Washington.

It was both as a reporter and a physicist that Potter attended that fateful meeting of theoretical physicists in a George Washington classroom one gloomy winter afternoon when the first announcement of the splitting of the uranium nucleus was made. The present writer was the only other reporter to hear the announcement and to both of us it was one of the high moments of a lifetime. We had a world "scoop" on what was potentially the most significant event in human history.

Both fact and theory at the time were quite obscure. Within a few months reporters found themselves very unwelcome in any place where atomic research was in progress. But for a short time Potter continued his work at the Department of Terrestrial Magnetism and assisted in some of the early crucial experiments of Drs. Merle Tuve, Lawrence Hafstad and Richard B. Roberts. He soon found himself pledged to strict secrecy, a most painful position for a reporter on the "inside" of the biggest story of the age.

An Historic Document

It is as an historic document that I find "Atomic Revolution" of chief interest. It is the first accurate account, according to my own memory of the events, which has appeared of the momentous George Washington meeting which was the first step to Hiroshima. Otherwise Potter attempts a popular exposition of nuclear theory which, from the very nature of the subject, cannot go much further than the famous Smythe report issued by the War Department last fall.

Dr. Gamow's book also is an attempted popularization of this extremely complex and difficult subject. Probably nobody else in the world is better fitted for the task than the George Washington professor of theoretical physics. He also was at the fateful meeting. He took part in much of the early experimental work and remained in contact with uranium fission developments throughout the war. For the past decade he has been a world leader in nuclear research. Naturally Dr. Gamow knows a great deal which he would not be permitted to reveal.

In addition, with his facile pen and active imagination he is one

of the best popularizers of abstruse scientific subjects in America. In the past he has been able to write for children scientifically accurate books about the atom. The present volume is one which deserves a place beside the Smythe report on any bookshelf.

The Bible of The Atomic Age

But one turns from all popular books and atomic energy with the feeling that the time has not yet come for the definitive volume. Writers must still hold themselves within fairly narrow limits. Much of the most vital information still is restricted. There is bound to be a sameness to all presentations for some time to come, regardless of the scientific and literary qualifications of the authors. The Smythe report remains, as it is termed by Potter, "the Bible" of the atomic age up to now.

Most war research was carried out under the Office of Scientific Research and Development,

Recommended

THE ATOMIC REVOLUTION
By Robert D. Potter. (McBride; \$3.50.)

ATOMIC ENERGY IN COSMIC AND HUMAN LIFE, By George Gamow. (MacMillan; \$3.)

NEW WORLDS IN MEDICINE, edited by Harold Ward. (McBride; \$5.)

THE NEW SCIENCE OF SURGERY, by Frank G. Slaughter. (Messner; \$3.50.)

SCIENCE IN A CHANGING WORLD, by E. J. Cable, E. W. Getchell and W. H. Kadesch. (Prentice; \$5.)

headed by Dr. Vannevar Bush of the Carnegie Institution of Washington and working in the closest possible co-operation with the armed services. Dr. Bush mobilized American science to win the war. The accomplishments range all the way from the bazooka and the proximity fuse to the mass production of penicillin. Much remains secret, or is being revealed a little at a time. The subject is literally endless, for war science touched almost every phase of human living. Histories now are in course of preparation for every section of the OSRD activities.

The New Type Of Warfare

Meanwhile, a "short"—464-page—official history, "Scientists Against Time," by Dr. James Phinney Baxter, president of Williams College, has been issued. It is far from a dull official report. As Dr. Bush states in his foreword, "it is the history of a rapid transition from warfare as it has been waged for thousands of years by the direct clash of hordes of armed men, to a new type of warfare in which science

becomes applied to destruction on a wholesale basis. This marks a turning point in the broad history of civilization." Dr. Baxter tells the story of the battle in the laboratories which often were as dramatic and exciting as any battles in the air or on the sea. The man in the laboratory was most assuredly a soldier, oftentimes the most important of all soldiers, but his story hitherto has not been told.

Incidentally, a very important contribution to scientific literature is made by the voluminous reports on enemy science during the war years which were gathered by teams of experts who accompanied the armies. These reports now are being issued, as rapidly as clearance can be obtained, through the Department of Commerce.

A Smithsonian Classic

A Government publication of outstanding importance in the field of anthropology is the "Handbook of South American Indians," two large volumes of which have been issued within the last few months by the Smithsonian Institution. It consists of comprehensive reports on the history, religion, ways of life and physical characteristics of all aborigines on the continent and is intended as a companion work to the Smithsonian's Handbook of North American Indians which long has been a classic. It is written by the leading authorities on each tribe and edited by Dr. Julian Steward of the Smithsonian staff.

Some of the most important developments of the war years were in the fields of medicine and surgery. They have not been subject to as rigid secrecy restrictions as have scientific developments in most other departments and, dealing as they do with the absorbing topic of the life and health of the individual, they are of extreme popular interest. Medicine is one of the easiest subjects to popularize, both for literary-minded physicians and lay writers.

In the Field Of Medicine

A significant book in this field is an anthology, "New Worlds in Medicine," edited by Harold Ward, consisting of popularly written expositions by such men as Logan Clendening, Gen. Edgar Erskine Hume, Perrin H. Long and Oscar Riddle. Special attention is paid to the development of medical science during the war. The medical profession of the Nation was mobilized and its accomplishments in saving life and preserving health under war conditions hardly can be exaggerated. There are comprehensive accounts of the work of American surgeons at the front and of the development of

penicillin, blood plasma and other blood fractions, and of the whole new field of aviation medicine.

"The New Science of Surgery" by Frank G. Slaughter, himself one of the foremost practitioners of this profession who served during the war as chief surgical

officer of one of the Army's largest camps, gives a clear, comprehensive account of many of the most notable advances. Particularly fascinating is the story of the birth of a new war surgery with the practical elimination of gas gangrene and of streptococcal infection of wounds during the Spanish civil war. It is of interest to note that hundreds of lives were saved in World War II because of the work of Spanish surgeons in its ghastly prelude of slaughter.

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