highly dependent upon the idea that the cancer is a cancer *because* of impaired respiration, Gause presents evidence that biological alkylating agents—actinomycin c, a new antibiotic "6270" having antitumor activity, 6-mercaptopurine and relatives—are much more active in inhibiting such respiratory-deficient strains than they are in inhibiting the parent strains. In short, evidence is presented that agents having antitumor activity inhibit the respiratory deficient strains without comparable inhibition of the parents, and that materials without antitumor activity inhibit both types of strains equally, if at all. Therefore, such mutants can be employed as detectors for potential antitumor agents.

The lectures are intelligently conceived, well organized, in excellent English, and attractively printed.

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Die Natur im Weltbild der Wissenschaft. Walter Hollitscher. Globus Verlag, Vienna, Austria, 1960. 499 pp. Illus.

This is a concise and well-rounded presentation of the fundamentals of natural science, written by a faithful Marxian for faithful Marxians. The book will also be interesting and useful to those non-Marxians who wish to study this perplexing phenomenon—Marxist science on this side of the Iron Curtain. Roughly the first quarter of the book gives an outline of the history of science; the second quarter is an account of physics, astronomy, and cosmology; the third presents the biological theories of evolution, heredity, and development; and the fourth deals with human evolution, Pavlovian psychology, and population problems. The tone of the book is set in the opening chapter by quotations from these great *scientific* authorities—Marx, Lenin, Mao Tse-Tung, and Engels. Marx and Engels are, indeed, the most frequently quoted authorities, followed by Lenin, Darwin, Haldane, Needham, Pavlov, and Ambarzumian.

The book is written interestingly and well; whether it presents an accurate and fair account of the topics with which it deals is a different question. I derived some wry amusement from the author's valiant but unsuccessful efforts to pay due homage to Michurinist biology without making himself thoroughly ridiculous. The technique adopted is to say that recent developments in biology make the gene theory pretty much indistinguishable from the Michurin-Lysenko teachings. Both are misrepresented in the process. But, after all, the value of the book is in the light it throws on Marxist science, not on science in general.

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Frontiers of the Sea. The story of oceanographic exploration. Robert C. Cowen. Doubleday, New York, 1960. 307 pp. Illus. $4.95.

To cram a readable account of the oceans into 307 pages is a man-sized job, and Robert Cowen has handled it well. The publisher, or whoever is responsible for such things, let three typographical errors creep in, but for a book that sells for less than $5 these days, one can be lenient and note such errors only in passing.

The book contains a concise history of oceanography and a report on nearly all major phases of work at sea: bathymetry, biology, currents, tides, and food, as well as an account of the most recent discoveries and developments (the author is very up to date). He has included 16 pages of excellent photographs; these are placed in groups of eight at intervals approximately one-third and two-thirds of the way through the book. Fifty-four line drawings by Mary Cowen add considerably to the book's charm. It is pleasant to see good hand sketches of currents, instruments, charts, fish, and plankton.

There is an introduction by Roger Revelle which is "up to snuff," endpaper charts at front and back, a briefly annoted bibliography listing 18 volumes that are well-worth reading, and what appears to be a good index (six and a fraction pages). I read the book rather carefully in about 6 hours.

There are a few statements or implications in the book which bear further discussion. Cowen states on page 74 that "much of the recent detailed data on undersea topography has been kept secret . . ." This was true until quite recently when the Navy's classification of bottom topography was brought up to date; this involved considerable declassification.

In his discussion of coral atolls, Cowen implies that the drillings on Bikini and Eniwetok were connected with bomb tests. They were only in the following way—the Bikini drilling was part of a general resurvey made in 1947, one year after "Operation Crossroads"; the Eniwetok drilling was convenient because the impending H-bomb test made logistic support available. Both atolls were drilled primarily for scientific purposes.

On page 181 it is indicated that coal and oil might form in deep water, although I do not believe that implication is intended. These products are certainly formed in shallow water. Similarly, on page 212, it is indicated that the vertical migration of plankton has been studied for the last half century, but it seems to me that knowledge about this phenomenon is of recent origin.

In the brief treatment of recent international affairs in oceanography (in the eleventh and final chapter), Cowen states that the Special Committee on Oceanic Research (SCOR) is a Committee of the International Geophysical Union (more correctly the International Union of Geodesy and Geophysics, IUGG). This a mistake. SCOR is a creature of the International Council of Scientific Unions (ICSU) of which the IUGG is also a member. Representatives are sent to SCOR from IUGG and from several other scientific unions that are members of ICSU.

It would have been useful if, in the section on tides, Cowen had included the seasonal exchange of sea water between the northern and southern hemispheres. However, this recent discovery, further checked during the IGY, is still not fully understood and perhaps would be better discussed at a later date.

The general sense of the volume, that the oceans are simply waiting for us to utilize them fully, is good. In gradual, but ever-increasing tempo, many agencies of the federal government are emphasizing research and exploration at sea. It is an investment in the future which we cannot afford to miss and which, indeed, we are not going to miss. The value of the oceans is fully brought out in this book.

Frontiers of the Sea will be worthwhile reading for the interested and lay public, for whom it is intended. By keeping the public accurately informed, Cowen has given important help to those who must determine that the United States does not lag in its scientific development.

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