

Science and Liberty

SCIENCE FOR THE CITIZEN. A Self-Educator Based on the Social Background of Scientific Discovery. By Lancelot Hogben. New York: Alfred A. Knopf. 1938. \$5.

Reviewed by HOMER W. LESOURD

IN "Science for the Citizen," Mr. Lancelot Hogben has written a companion volume for his "Mathematics for the Million," which appeared last year. In the subtitle of this new book the author serves a warning on the prospective reader; this is "A Self-Educator based on the Social Background of Scientific Discovery" and this constitutes a concise and accurate description as well as the justification and motivation of the book. It is an omnibus of scientific information in which man is projected on the background of time and space, and feels the repercussion of this background.

The book has five principal divisions. Part I, "The Conquest of Time Reckoning and Space Measurement," is largely devoted to astronomy, although it includes optical instruments, mechanics of the earth, wave motion, sound, and light. There is an extended treatment of the elementary principles of navigation. Part II, "The Conquest of Substitutes," deals with chemistry in its relation to three requirements of everyday life in civilized countries: metals, munitions, and medicines. Considerable organic chemistry is introduced in this section. Part III, "The Conquest of Power," presents certain aspects of physics, especially heat and electricity and their various effects and applications. Part IV, "The Conquest of Hunger and Disease," deals with the body as a machine, with bacteriology, evolution, human ecology, and other biological matters. This happens to be the author's own scientific field and he treats it extremely well. Part V, "The Conquest of Behavior," is devoted to psychology and to sociology. In this part, and in the epilogue, the author emphasizes the vital connection between scientific progress and true personal liberty, a theme which permeates the whole book and provides its *raison d'être*.

The author's style is clear and entertaining. His flippancy, far from detracting from the scientific value of his writing, gives a peculiar zest to it. The anecdotal incidents bearing on the history of scientific progress are always appropriate and always interesting. A notable characteristic of the writer's ability makes it pos-

sible for the reader to plunge into the text at almost any point and be carried along by the inherent interest of the argument. This may seem to imply lack of continuity and a loose organization, but in spite of the fact that the author refuses to adhere rigidly to traditional lines of the several sciences, his sequence of topics serves his own purpose well and is never inconsistent with his guiding principle, "the social background of scientific discovery."

It is greatly to the credit of the author that within the bounds of 1082 pages he has been able to assemble such an incredible compendium of scientific knowledge. One who has special scientific interests will naturally regret that certain

topics have not received more attention, such for instance as photosynthesis, muscular exercise as an energy transformer, and the important results of astrophysical investigation. Commercial applications of a scientific nature are given but scant consideration; however, the interrelation of pure and applied science is constantly kept before the reader. The book is remarkably free from scientific inaccuracies.

The author in his preface states that he shares with Faraday and Huxley "a firm faith in the educability of mankind." The book, in spite of the author's engaging explanations in a fascinating historical setting, is in reality a serious textbook and is not to be classed with the common type of popular science book which glorifies science and its practical applications but fails to teach the fundamental concepts and principles of science. The reader of this book finds, perhaps to his discomfort, that he is led somewhat insidiously into portions of mathematics which are indispensable if one is to study an exact science. A clever reader will discover just where he may permit himself to skip the mathematical treatment without doing violence to the continuity of the book, and fortunately there will be no teacher at hand to reprove him. However, the "citizen" will question whether the introduction of trigonometry, absolute units of force and energy, an extended discussion of magnetic moments and the solution of numerical problems will contribute materially to an appreciation of the impact of science on society.

The reader will doubtless be very favorably impressed by the selection of historical pictures and illustrative line drawings. The latter are unique in their clarity, simplicity, originality, and teach-

ing value. Unfortunately many of the half-tones are not of particularly good quality.

Naturally one is led to wonder whether the book will appeal to the average reader of non-fictional literature who has no special interest in science. Its size and its mathematical aspect will doubtless discourage many such persons. However there are many serious-minded laymen in America who are striving to gain a better understanding of the development of man's material and intellectual estate. The teacher of science, and to a certain extent the teacher in other fields of human thought, will find in this book abundant material for the enrichment of his classroom work and for his own stimulation. Its value is greatly enhanced by the remarkably fine bibliography, which is of an international character, and the carefully prepared index.

One may disagree with the author's views regarding certain philosophers and scientists and his prescriptions for the disorders of the human race, but one can have nothing but praise for the delightful and thought-provoking qualities of the book.

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The Tories in Power

THE SECOND TORY PARTY, 1714-1832.

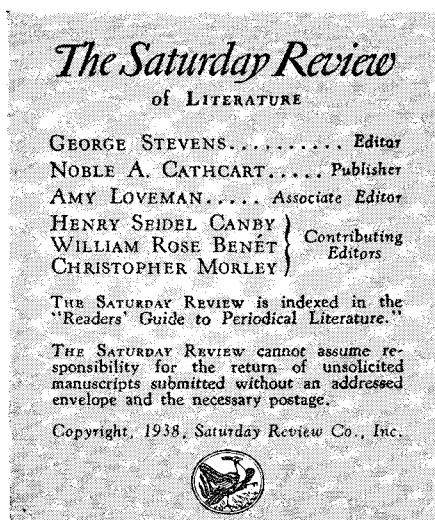
By Keith Grahame Feiling. New York: The Macmillan Co. 1938. \$4.

IN a former book Mr. Feiling traced the history of the Tories from their Cavalier beginnings to the destruction which overwhelmed them on the death of Queen Anne. This volume, which carries on their record to the eve of the Reform Act, is equally masterly in its quiet authority. It is scholarship of the most thorough and exacting kind, based upon documents in both public and private collections which have not hitherto been so exhaustively examined; and it is presented not only with the accuracy to be expected from an experienced historian but with a narrative and expository skill that greatly enhances its importance. It is also, of course, much more than a mere party history; it is a complete study of the temper of political England from the fall of Bolingbroke to the death of Canning.

For decades after the Hanoverian succession Toryism was ineffectual, incapable of struggling against the bribery and corruption by means of which the Whigs had entrenched themselves in power. Not until the accession of George II and the emergence of new problems, both internal and foreign, was there any substance to the party. Then it was gradually reborn to power, and achieved under the younger Pitt the resistlessness which its opponents had so long enjoyed. Mr. Feiling is equally judicious in dealing with the years of decadence and with the years of strength.



Lancelot Hogben



Categories of Reviewing

ABOUT once a week we receive a letter deploring, or viewing with alarm, what is supposed to be a tendency on the part of book reviews to neglect literary values in favor of something more glittering but more ephemeral. Criticism is, so these occasional correspondents inform us, overlooking its proper occupation with the best that has been thought and said, with the adventures of the soul among masterpieces, in order to concern itself with mere superficialities. These letters usually come from teachers, most of them teachers in colleges. There is undoubtedly something in what they say. However, there is sometimes a categorical quality in the argument for literary values—an insistence that reviewing should concern itself with these values exclusively—which is as intransigent in its way as the opposite argument, equally familiar and recently more fashionable, that the function of criticism is to evaluate literature in terms of social significance. These questions have from time to time been thoroughly aired in *The Saturday Review*; but an occasional recapitulation makes for clarity.

No doubt it is unnecessary to explain the distinction between criticism and reviewing; not only is it familiar to the verge of platitude, it is also the very point made by our correspondents, who want above all else to maintain the distinction, to insist on its rigidity. What can be said, however, is that both criticism, which is concerned with permanent values, and reviewing, which is concerned with the ephemeral, can exist side by side. They can exist between the covers of the same periodical, they can even occasionally be found together in a single article. It is an ingenious idea to borrow Gresham's law from economics and apply it to literature—to say that bad criticism, like bad money, drives out good; but this is only an analogy, impossible to prove. Between criticism and reviewing you are not obliged to choose; you can have both.

That the permanent values of literature are the paramount concern of criticism, no one disputes. *The Saturday Review* has, in the past, frequently had occasion to resist the attempt to substitute other values for literary values—to subordinate literary significance to political or economic significance. We do, however, recognize that other values than the purely literary exist in the whole field of books. For instance, it would be as silly to review a book on economics in terms of literature as to review a book of poems in terms of politics. Good reviews will, of course, point out that the book on economics is readably or unreadably written, as the case may be, and will identify the political trend of the book of verse if it has one; but this is incidental. The point is that people read books for any number of reasons, for information, for amusement, and for the enrichment of life through the imagination; that books have all kinds of values, literary value, news value, entertainment value, practical value; and that books should be reviewed in their own terms.

All this has been said before, but it is surprising how many people were not listening. We often read reviews submitted by young reviewers who would like to write for these columns, and we are struck by one quality common to most of them—the attempt to compare a current novel with “War and Peace,” a current play with “Hamlet,” a current biography with Boswell or even Plutarch. The matter is certainly reduced to the absurd when a reviewer writes, for instance, in all solemnity, that a novel by Lloyd C. Douglas is not so good as a novel by Dostoevski; but this is no worse than some things we have seen, and it is an extreme illustration of the fact that there are many books to which literary standards cannot appropriately be applied. Most current books, in any event, die a natural death without having the big guns trained on them; time enough to apply criticism when a book shows signs of vitality and toughness, of making a bid for more than temporary life.

We can, of course, recognize many things in the atmosphere that prompt English teachers to write to us, urging that literary standards be upheld. The cult of the lowbrow and the technique of showmanship have unquestionably invaded every field of literary and intellectual activity. That, however, is another matter. Cheapness and superficiality cannot be combated by pretension. To confine discussion of books to the analysis of their purely literary qualities will uphold not literary standards, but intellectual snobbery. Those who underestimate the other values of books will perform a considerable disservice to the cause of reading, and will alienate many readers from the very standards they are trying, with too much rigidity and solemnity, to maintain.

Ammonoosuc

By CHRISTOPHER MORLEY

THERE are two streams that bear the name,
One is the Wild and one the Tame;
And on an afternoon we came
To the Wild Ammonoosuc.

We lay in stupor, sweating, prone
Upon a ledge of sunwarmed stone;
I could not rest for beauty shown
Beside the Ammonoosuc:

The small pink flower on supple stalk,
The confidential water-talk
As you came down from Moosilauke
O amber Ammonoosuc.

Unspeakable in rhyme or prose
That moving Now the spirit knows,
The flow that pauses, pause that flows
So like the Ammonoosuc,

And I, who had escaped from men,
From How and Why and Where and
When,
Cried Take me, make me whole again
O blessed Ammonoosuc.

Too late I saw, beyond dispute:
“You must not bathe, must not pollute,
If so, the State will prosecute—
Preserve the Ammonoosuc!”

New Hampshire Forest Monitors,
Forgive my sins as I do yours—
Clad only in a pair of drawers
I entered Ammonoosuc,

And where her crystal overran it
I lay down in channeled granite;
Braced against the pushing planet
I bathed in Ammonoosuc.

Pollute her water? No, not I;
And may these verses justify
My trespass in the youthful, shy
And willing Ammonoosuc,

For in that sluice of stream and sun
I dreamed that I and everyone
A whole new ethic had begun
Inspired by Ammonoosuc.

Refreshed in her, I understand
One truth from A to ampersand:
That every heart in every land
Has its own Ammonoosuc.

Be then, O secret cataract,
For me both parable and fact;
You gave me what my courage lacked
O reckless Ammonoosuc.

When all the world moves widdershin
(Half Tory and half Jacobin)
Come pour your mountain freshet in,
My sweet Wild Ammonoosuc.

The open way has symbols three:
The fire, the stream, the growing tree;
If I grow morbid, say to me:
Remember Ammonoosuc.