

them have reached wrong conclusions, and *Time* has gone wrong along with them, although not often."

The collection includes something about practically everything scientific. Readers will perhaps learn most from the longer and more thorough stories which report major developments in a clear, effective style. One of the best stories summarizes the new theory about the nature of the universe as conceived by Fred Hoyle and his colleagues at Cambridge University in England. A central point of the theory is the notion that matter is being created at a rate of one hydrogen atom per quart of space every billion years, and Leonard does more than simply describe this controversial idea. He shows how it arose logically from other ideas and why it implies an observable universe without beginning or end which continually replenishes and refuels itself.

Other discussions concern a number of fields that represent highlights of present-day research—guided missiles, a skeptical report on flying saucers, the latest material available on atomic weapons, advances in aviation, and machines designed to do some of the work of the human brain. The great majority of the stories are equally intriguing although less comprehensive. The pace of writing weekly science columns severely limits the time available for gathering information from articles and interviews. Shorter reports go into a variety of subjects from interplanetary communications and the origin of life to the discovery of mummies and the excavation of prehistoric villages. A section devoted chiefly to the ways of animals tells of hens that play baseball, the mating signals of moths and mosquitoes, rattlesnake vision, a fossil creature which resembled a rhinoceros and had a pouch like a kangaroo, molds and musk deer and manx-cats.

"The *Time* Book of Science" does not have a single dull or obscure page. But the result is still confusing. The stories keep coming one after the other, without transitions or introductions. It is impossible within a few pages to jump from underwater mountains to a remote galaxy to an ancient Connecticut waterfall and back to space again—and at the same time retain anything worth retaining. The net effect is something like wading through a pile of newspaper clippings covering national affairs since 1950. Careful editing, such as rewriting to eliminate repetitions, might have helped make this diverse collection of individually interesting stories into a coherent book.

Where Are We?

"Frontiers of Astronomy," by Fred Hoyle (Harper, 360 pp. \$5), is a distinguished British scientist's attempt to undertake to explain to the general reader some of the latest theories about the nature of the physical universe. Robert H. Baker, who reviews it below, is the author of "The Universe Unfolding" and other books.

By Robert H. Baker

IN ITS style and purpose Fred Hoyle's new book "Frontiers of Astronomy" is remindful of J. H. Jeans's widely read book "The Universe Around Us." It undertakes to acquaint the general reader with current knowledge of the physical universe and with prominent theories concerning its problems as yet incompletely solved. Jeans's book was published in 1929, when the universe seemed already to have revealed a complexity far beyond human ability to fully comprehend it. Yet in that year Edwin Hubble reported the red shifts in the spectra of galaxies, which led to the spectacular idea of the expanding universe, and it was only five years after he had demonstrated the existence of the galaxies themselves. The later author's task, which he ably accomplishes, is greater than that of his predecessor.

Mr. Hoyle is Fellow of St. John's College, Cambridge, England, and lecturer in mathematics. He has been a welcome visitor to the United States, where he has frequently conferred with our astronomers; and he will return soon under his appointment as senior research fellow in astronomy for the coming spring quarter at California Institute of Technology.

His book begins with the earth, which in the current thinking is 4,000 million years old. The theory of its liquid core is favored, and also the idea that our mineral wealth is squeezed up from the deep interior; if this wealth is squandered there will be plenty more coming up in several million years. Then come the planets and the sun, where the material of its atmosphere and corona are considered to be streaming in from outside. The stars are next, and finally our galaxy and the exterior galaxies, including the latest evidence from their radio emissions.

The emphasis on problems of cosmic evolution reflects the present interest in these matters. Concerning the histories of the stars, Hoyle is inclined to go along with the ideas

of others, particularly of American astronomers; but he adds the thought that the puzzling magnetism of the sun and stars may be concentrated from the original magnetism of the cosmic dust out of which they were formed. For the evolution of the planets he offers his own new theory. The material of the solar system, he thinks, was first assembled as a single mass of gas in the sun's position. Increasing speed of rotation of the contracting mass resulted in the spreading of a gaseous disk around it to provide material for the planets and at the same time slowed the sun's rotation to its present low speed, generally a difficult feature to explain. For the reader (and perhaps the present reviewer as well, who wonders whether some steps of the process could have occurred), Hoyle remarks helpfully that "both the Matterhorn and Everest were climbed by routes that were at first thought to be impossible."

The concluding chapters on the galaxies are up to the times and make particularly interesting reading. Indeed, some readers may decide that they are in advance of the times. The idea of continuous creation, which has intrigued some scientists in other fields, is applied to the problem of the expanding universe. Instead of an initial blob of matter of incredible density and temperature and of dubious origin unless by fiat, Hoyle keeps the universe in running order by the continuous appearance of new material. Nature's laws are statements of how nature behaves; perhaps the continuous origin of matter is a physical law. This is an excellent book for anyone of moderate preparation; useful to the scientist too for its clear and accurate descriptions of the present state of astronomy.



—Ramsey & Muspratt.

Fred Hoyle—"clear and accurate."

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"Main Street" Comes Into the Home

SINCLAIR LEWIS'S "Main Street" is thirty-five years old. When it first appeared the nation was startled by its crackling frankness and bony realism. Never before had American Midwestern life been recorded in such pitiless detail. Gopher Prairie became the symbol of icy virtue and sealed-in bleakness.

The shock-waves of the book were spaced out over a decade or more. But after a generation of depression, war, and the fear of war—a generation fed on hard words and harder facts—"Main Street" seems like a different work. It no longer stuns. Reread today, it seems like a sentimental journey into an age of high-button shoes and high surface morality. Even Gopher Prairie in retrospect has a mellow, antique quality. The people do not seem refrigerated by their virtue, as they did in the early 1920s. They have warmed up at least to the extent that we accept them as people rather than as stern subjects for satire.

In terms of style and form "Main Street" today almost seems like a corrective for the abuses of the modern novel. Words are used for narrative power and not as barker's devices to hold the attention of the reader; there is not a single outhouse phrase in the book. Moreover, Mr. Lewis apparently realized that he could make an impact on his readers without demonstrating an adolescent's familiarity with the obscene. Nor did he feel that he could give a reader his money's worth only by making a stage set out of the conjugal bed and by offering literary aphrodisiacs for encores. His purpose was not to cheapen or brutalize life but to scrutinize it.

"Main Street" deserves to be re-

issued. Our suggestion, however, does not rest on the changed contours of the book today but on the timeliness of what then seemed a subordinate theme. For it is not so much the story of Gopher Prairie in general but of Carol Kennicott in particular that makes the novel modern and important. Carol Kennicott is well educated, creative, full of ideas for bringing color into her life and the lives of those about her. But Main Street offers little outlet for her interests and abilities. Her doctor husband has all the manly virtues but he has little time or taste for the life of the mind. Thus, boredom becomes the enemy.

IN THE early 1920s the story of Carol Kennicott had no general relevancy. She was noteworthy only because she was exceptional. Today she is noteworthy because she is unexceptional, symbolizing the predicament of the new American woman.

For the Carol Kennicotts in our time are legion. They are the college-trained young married women, full of life, bounce, and energy, but their Main Street is in the home. It is not that they object to being the family cook, housecleaner, nursemaid, handyman, and chauffeur. It is just that they believe their duties do not exhaust the meaning of life. They respect the requirements of growth—not only in their children but themselves. They would like to be able to do creative things. But the housework tends to become an end in itself; indeed, a dead end.

They look to their husbands for some sense of sharing in the intellectual adventures of life, but in all too many cases they find their mates are consumed by their businesses, precious little news of which they seem willing to share, or are content to settle down in front of the television set for an evening of Westerns and crime shows.

Added to this is the bewilderment and antagonism of the male when confronted by his wife with a plea for some creative sparkle in the weekly routine. There is also some male condescension in discussions concerning national or world affairs. Ironically, not infrequently the woman will have taken the trouble to read and inquire about a situation in the news while the male may scorn authoritative information because he knows too much to bother to read. Much has been made of the fact that women possess most of the nation's material wealth. It is possible they also are better informed about what is happening in the world. But neither superior holdings nor superior knowledge is enough, apparently, to win them the respect they crave and deserve as individuals.

There is enough material here for a substantial number of important novels. Meanwhile Sinclair Lewis's "Main Street" will do until a better one comes along.

—N. C.

Angle

By Julia McGrane

NOW time runs all one way. No circle
Can turn upon the axle of this hour.
In imperceptible angle from its point
Two lines, lone to infinity, are our
Directions. Across the slight divergence
Hands still meet, eyes question and reply.
This is as like the past as anything
Can be that is not. Hearts still deny
Deflection. Yet no hour of summer sun
No winter night will ever wear away
The calendar of this encounter. Here
Begins eternity of separate day.