

professor of astronomy at Cambridge and is one of the greatest astro-physicists in the world today. His book is authoritative. Every one who would bring his scientific ideas up to date should read it. The author sets forth in intelligible language the space-time ideas of Einstein and Minkowski, the Fitz Gerald contraction, the atomic theories of Rutherford, the Quantum theories of Niels Bohr and the still more recent quantum theories of Heisenberg and Born. Significant as these developments are in the field of science, they have almost as great a significance in the field of religious thought. Three of them especially must be mentioned.

There is the new idea of matter. It is now conceived of as mostly emptiness.

In fact, as Professor Eddington points out, if all the emptiness were squeezed out of a human body, what remained would be but a speck under a microscope. What seems so real and solid turns out now to be more like a mathematical equation than anything else. Our scientific information about it is summed up in measures and in measures only. The external world of physics is a world of shadows. The element of permanence in it is essentially a contribution of mind. All that science can see today is, first, an image in our minds; second, a something, we know not what, in the outside world; and third, a set of pointer readings. Matter has no meaning apart from consciousness. Surely this assertion of physical science that mind is no mere dependent upon matter must bring aid and comfort to religion, for it puts all materialistic theories in a bad way. In so far as anti-religious ideas depend upon materialism their case is considerably weakened by the outlook of the modern physicist.

Then there has come the breakdown of determinism. Up until very recently science has held rigidly to this dogma. It confidently affirmed that a superhuman mind, knowing all the causes at work, could foretell the outcome. It found no place in the universe for genuine freedom. This theory has been knocked into the proverbial cocked hat. The newer triumphs have been won on the basis of statistical laws which do not rest on the basis of causality, which do not pretend to predict the behavior of any particular unit, but only of unit aggregates. Even the great casual laws are turning out to be statistical in their character. Indeed, physical science sees no reason for denying the power of the

mind to tamper with the odds on atomic behavior. Mechanistic determinism in the old sense is dead. The bearing of this upon the religious outlook is obvious.

Finally, it must be mentioned that both from the Einstein theory and from the telescope, astronomers now consider the universe to be finite rather than infinite. This would seem to make it more necessary to assume an infinite creator. An infinite universe might be self-existent; it is hard to see how a finite one could. Moreover, Professor Eddington points out that our solar system is a freak, that not one sun in a hundred million has developed a solar system like ours. After an exhaustive survey of the possibilities he says, "I feel inclined to claim that at the present

should read it and bring their science up to date.

EDMUND B. CHAFFEE.

The Greatest of the Puritans

Cotton Mather: Keeper of the Puritan Conscience. By RALPH and LOUISE BOAS: Harper.

COTTON MATHER has always been held in tradition as a repellantly bigoted person, a kind of monster upon whom all the alleged sins of the Puritan spirit have been visited by posterity. Barrett Wendell did what he could, although not with much success, to dispel this legend, but Ralph and Louise Boas have presented us with the first adequate and convincing full-length portrait of the great divine: and reading the book we are more and more astonished that he should have been, as they say, "singled out for detraction." For Cotton Mather was much closer to a saint than a monster.

It is true that he was a leader in the persecution of witches, although even this activity has been exaggerated by popular tradition. On the other hand, it was he who led the fight for inoculation against small-pox in the face of the one doctor in Boston who held a medical degree, not to mention all the other doctors who, when baffled by a disease, had a way of ascribing it to witchcraft. Indeed, Mather was uncommonly enlightened. People reviled him, he wrote, as if he "had been the Doer of all the hard Things that were done in the Prosecution of the Witchcraft." But he was rather the scapegoat than the arch-offender. And otherwise he was the gentlest of men, as devoted to the liberal cause in politics as he was to the conservative in religion.

He was an afflicted child, a stutterer who, like Demosthenes, made himself a mighty orator only through heroic efforts. He was an infant prodigy at Harvard with, at twelve, a reading and speaking knowledge of Latin, a reading knowledge of Greek, and some knowledge of Hebrew, notably innocent and credulous, fair game for boys who were less sensitive than he: and it was at this time that he developed what amounted to his life-long persecution mania, for throughout his life, as our authors say, "whether his neighbors' mirth was kindly or malicious, he saw in it only persecution." He devoted himself with fanatical hero-worship, to the service

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To Be Published Next Week

This Side of Jordan. By ROARK BRADFORD: Harper. Feb. 1.

Silver Circus. By A. E. COPPARD: Knopf. Feb. 1.

Scotland's Royal Line. By GRANT R. FRANCIS: Dutton. Feb. 1.

Village Doctor. By SHEILA KAYE-SMITH: Dutton. Feb. 1.

Mamba's Daughter. By DU BOSE HEYWARD: Doubleday, Doran. Feb. 1.

Expiation. By ELIZABETH: Doubleday, Doran. Feb. 1.

Red Harvest. By DASHIELL HAMMETT: Knopf. Feb. 1.

Seven Modern Comedies. By LORD DUNSANY: Putnam. Feb. 1.

Worlds Within Worlds. By STELLA BENSON: Harper. Feb. 1

time our race is supreme and not one of the profusions of stars in their myriad clusters looks down on scenes comparable to those which are passing beneath the rays of the sun." This seems to restore man to his old position. He again stands at the center, not in space, but in significance. And this is what the religious man has always believed.

In a word, the science of 1929 sweeps aside materialism and determinism and it reasserts the uniqueness of man. It does this and much more, as Professor Eddington points out. The book is stiff reading, but it is flavored and lightened with humor. It is as clear as the subject will permit. Those who assume that science has said "Nay" to religion

Readers and Writers

By ERNEST BOYD

IT IS NOW a couple of months since I discussed—more briefly than it deserved—Julien Benda's "The Treason of the Intellectuals" (Morrow). In the meantime I have been watching with some curiosity for the comments of the reviewers on this work, which has stirred up so much discussion in France. Such reviews as I have seen prompt me to return to the subject, if for no other reason than because the author's use of certain prominent European writers to illustrate his thesis seems to have weakened his argument in the eyes of American readers.

That thesis, it will be remembered, is that the function of the intellectual in the past has been to serve and uphold disinterested, or ideal values. Those values are essentially opposed to the realistic values, the practical aims of the men of action, the average citizen. In our time this situation has been reversed. M. Benda sees "a mass in whom realist passion in its two chief forms—class passion, national passion—has attained a degree of consciousness and organization hitherto unknown; a body of men who used to be in opposition to the realism of the masses, but who now, not only do not oppose it, but adopt it, proclaim its grandeur and morality; in short a humanity which has abandoned itself to realism with a unanimity, an absence of reserve, a sanctification of its passion unexampled in history."

Upon a proper balance of these two elements in society, the realists and the idealists, civilization depends. When the former completely dominate the latter, the result must be barbarism. M. Benda, being a Frenchman, very naturally cites his examples from such contemporary leaders in France as Péguy, Barrès, Maurras; in Italy he mentions D'Annunzio; in America William James. For the same reason, I suspect, he equally naturally charges the unspeakable Hun with being the cause of it all. The Germans are responsible, he thinks, for confusing nationalism and humanism, for infecting philosophy with nationalist prejudice.

M. Benda's examples, as I say, have apparently diminished the force of his argument with American readers. They are surprised to find James in the same galley as patrioteers of the Barrès or Treitschke type. One reviewer accuses

him of hasty generalization and contends that another list could easily be made of intellectual leaders who have stood above the battle and refused to surrender to the realist passion of the mob, citing the case of Bertrand Russell. Here, I think, there is a misunderstanding, due to the fact that the jacket of the book overemphasizes one aspect of M. Benda's case, by saying that he accuses the modern intellectual leader of being a "promoter of war."

While, in the long run, that is the inevitable result of the abdication of the intellectuals, M. Benda does not necessarily acquit them of his charges merely because they may have adopted a detached attitude during the last war. The "treason of the intellectuals" far transcends the immediate occasion of a particular international conflict. To M. Benda pragmatism is the enemy, pragmatism "whose teaching during the past fifty years by nearly all the influential moralists of Europe is one of the most remarkable turning points in the moral history of the human species. It is impossible to exaggerate the importance of a movement whereby those who for twenty centuries taught Man that the criterion of the morality of an act is its disinterestedness, that good is a decree of his reason insofar as it is universal, that his will is only moral if it seeks its law outside its objects, should begin to teach him that the moral act is the act whereby he secures his existence against an environment which disputes it . . . that the morality of an act is measured by its adaptation to its end, and that the only morality is the morality of circumstances."

HERE cleared of the allusions to the attitude of the French and German intellectuals before and during the World War, is M. Benda's case, stated in universal terms. Would it be so easy, I wonder, to draw up a list of contemporary thinkers who are not tarred with the brush of pragmatism? M. Benda declares that "the educators of the human mind now take sides with Callicles against Socrates," although "Zola, Romain Rolland and Einstein have drunk the hemlock." How many others have? Has Bernard Shaw? At first glance

one might be tempted to quote him as an outstanding instance of a public man who has consistently refused to surrender to the passion of the mob, or to the realism of the state. Yet, we find him defending Mussolini on grounds which would not be unworthy of any pragmatic bureaucrat. One is reminded then of the fact that, years ago, Mr. Shaw boasted that his theories were one thing and his practice another.

IN THIS COUNTRY H. L. Mencken might qualify as an intellectual who has stood aloof from nationalist passion. He is surely no American Barrès glorifying the national hero. Yet, he is the true son of the country where pragmatism was born, and he has loudly proclaimed his intention of never drinking the hemlock under any circumstances. His later work is more and more concerned with current political and social problems and, while he asserts that he is a disinterested commentator without any "Messianic delusions," he is constantly absorbed in matters which are of the very essence of the market-place. Nothing would bore him more than the ivory tower of M. Benda's dreams. At the same time, Mr. Mencken would not disavow the following passage, which expresses in other terms what he himself has frequently insinuated:

"To come back to the realism of my contemporaries and their contempt for a disinterested existence . . . I wonder whether humanity, by adopting this system today, has not discovered its true law of existence and adopted the true scale of values demanded by its essence? The religion of the spiritual . . . seems to me a lucky accident in man's history The obvious law of human substance is the conquest of things and the exaltation of the impulses which secure this conquest Orpheus could not aspire to charm the wild beasts with his music until the end of time. However, one could have hoped that Orpheus himself would not become a wild beast."

If our Orpheuses have changed their tune, may it not be because they, too, realize that humanity does not believe and never did believe that "the supreme values are the good things of the spirit?" In that case, the intellectuals have betrayed a cause in which the world is no longer interested. We have got the intellectual we deserve.