The exhortatory message of the book is largely drawn from the vision and the triumphant challenge of the Apocalypse. The evil in the world can be overcome, on condition of our realizing that it already has been overcome, and a divine order of the world established, in the strength of the victory of the Lamb of God, the Son of Man. 'We can participate in that really total victory by becoming, each of us, that "imperceptible obstacle" that stops the current. . . . The condition of that final victory is that we become each of us men, responsible persons. The only irreducible obstacle is the saint. . . . The world is full of demons, they flourish by millions, and we will never be able to get rid of them. But really we can only exorcise the devil from ourselves. Diogenes looked for a man, lantern in hand. It does not surprise me that he never found one. The real way to meet a man is to become one. Every man living a more respectable life *is* a defeat for the devil, here and now, and for the tyrants too; an absolute and unanswerable defeat, a primary element in the imperishable order'.

But this is not only a book of great theological, of vital human importance. It is also a masterly and fascinating piece of writing; in which, therefore—as the author would say—devilry itself is turned to good account. It is written with a wit and passionate irony that are reminiscent of Kierkegaard. And nothing of its poetic virtue would seem to have been lost, but if anything reinforced in the translation. It only remains for the devil to affect the sales.

RICHARD KEHOE, O.P.

A PREFACE TO LOGIC. Morris R. Cohen (Routledge; 8s. 6d.)

The author describes this book as 'not . . . a treatise on logic but an exploration of the periphery of logic, . . . the applications which give it importance'. It is in fact a development of the traditional thesis that logic is the universal instrument of science. As might be expected from his excellent *Introduction to Logic and Scientific Method*, the author is sharply aware of the hypothetical character of experimental science and of the fallacy involved in the popular view that a hypothesis is strictly verified by the verification of its implications. Accordingly the second half of the book is devoted to questions of probability and statistical methods. Yet experimental science is not relegated wholly to the field of the merely probable. 'If the actually formulated laws of our physics can be shown to undergo change themselves, it can only be in reference to something else which is constant in relation to them'. It is this 'something else' —'the relations of certain constants and variables'—which is the subject matter of logic and which constitutes the field of every science. 'Every science must assume some invariant connections or categories'—here we have in sum the subject matter of both formal and material logic. Both this book and the *Introduction* already referred to do good service in emphasising and expounding the necessity of such an invariant background not only for science, however

*hypothetical*, but even for the most tentative and elementary investigation if it is to be fruitful of truth. 'Without objectively necessary relations or rules there can be no rational experiment or significant doubt'.

This, quite certain, position does not seem consistent with the author's view that the subject matter of logic is identical with that of pure mathematics, at least on his account of the latter. 'Geometry, as a branch of pure mathematics, serves only to develop the necessary consequences of various hypotheses or assumptions'. Yet logic, we have seen, investigates the invariant relations which constitute the field of *any* science. It is the development of the algebraical calculus of classes and propositions which has given rise to this much-debated question. Three points are seldom brought out on the other side. Firstly, one may doubt whether the meaningfulness of the question as to the identifiability of logic and mathematics is entirely due to false historical ideas about the nature of the latter. Secondly, in the course of a calculus such as Russell's definitions are introduced which are admittedly in terms of pure logical notions, but which are in the result recognisable as mathematical and debatably purely logical. Thus the series of whole numbers might be defined as the 'posterity of the class whose sole members is the null class with respect to the successor relation', and the idea of posterity and successor might further be defined in terms of classes and relation. But the resulting complex class is surely not just any class such as appears in the elementary calculus of classes. It is a specified class to which of course the calculus can be applied, but no longer at least obviously a purely logical entity. Water is not a gas because it is constituted out of gases.

The author would answer that 'geometry, as a branch of pure mathematics, is interested in a problem of logical proof: whether if certain propositions are true, certain other propositions are so likewise'. But this might be said with equal truth or falsehood of any science. It is logic that is concerned with the If . . . Then . . . , and the conditions under which that implication holds; it is the subject matter of the 'certain propositions' which distinguishes the other sciences from logic and each other, mathematics included. All the names employed in extra-mathematical discourse can be defined in purely logical terms, or at least treated as purely logical entities, but such treatment does not identify geography and geology with logic or mathematics.

Thirdly, it is doubtful whether the very calculus itself should in its symbolic form be claimed as logic. The principles of its operation are matter for logic; one of its possible applications is the presentation of some truths about some logical entities in one of many possible dependent sequences. But from these facts and its success as a mathematical instrument it does not appear to follow that mathematics and logic are identical.

The author's account of what he calls 'twilight zones' of being,

and of the principle of polarity, i.e., 'of the necessary copresence and mutual dependence of opposite determinations' has much that will recommend it to Thomists. Matter and potency impair and shroud the intelligibility of act and perfection. The mind's dual activity of division and composition is an illustration which might be added to those given of the operation of this principle. Those only are subject to the accusation of excessive logicism who are conscious of the mind's dividing function to the exclusion of its compounding one. The opposite extreme, leading in metaphysics to pantheism, is obtained by denying the validity of irreducible distinctions. Another application to which a good deal of space is devoted is in the field of ethics. Thomists are as familiar as anyone with the antithesis between the universality of ethical principles and the particularity of human acts. The whole chapter entitled 'Values, Norms and Science' is a most interesting defence of normative science in general and of ethical science in particular, against positivism that denies the applicability of universal norms to the twilight zones of the particular.

Ivo Thomas, O.P.

They Went to Portugal. By Rose Macaulay. (Jonathan Cape; 18s.)

Miss Rose Macaulay's proved erudition; her achievements as an anthologist; the high malice she brings to the exercise of debunkery; the competence with which she receives and acts upon a fresh idea have combined to make her symposium on Portugal unique among books of travel. No other writer before her has obeyed an impulse to collect and annotate the lives, letters and diaries of English visitors to a foreign clime in order to construct a mosaic panorama of the country so seen, so praised, so maligned; so served and exploited as Portugal has been ever since Simon of Dover leading his men of Kent in the Second Crusade 'put in at Oporto and was persuaded to help Alfonso I to capture Lisbon from the Moors'.

The story of the English in Portugal, whether they lived there in nightmare luxury as did William Beckford at intervals through twelve fantastic years, or settled like an army of ants in the valley of the upper Douro, there to found great fortunes on the manufacture and export of port wine is, as Miss Macaulay has collected it, a history of Portugal itself. Her method zig-zags a good deal through the centuries. She groups her figures by character and occupation rather than by eras. Like Cardinal Wiseman when depicting Christian society in third-century Rome, she admits that 'chronology has been sacrificed', but, in spite of this concession, possibly because of it, vivacity has been almost always preserved. However, there are pages where Miss Macaulay's appetite for gossip about dead and never very important matters gets the better of her judgment and she invites her readers to giggle with her over such small beer as the scandals of seventeenth-century diplomatic circles in Lisbon society; further, her shrewd rationalism tarnishes her pictures of missionary efforts, Catholic, Protestant or merely business-like as were George