tensors, and that complex-variable theory stops at the Cauchy-Riemann equations and does not touch on Cauchy's theorem.

Though one may suspect that, of the distinguished authors, the Professor of Physics is responsible for much of the motivation while the Reader in Mathematics has been the keeper of the mathematician's conscience, there is no evidence of any such dichotomy in the book itself. It is an integrated piece of work; mathematical rigour is not something to be taken or left according to taste, it is woven into the stuff and fabric of the volume. Proof is as important to the scientist as it is to the mathematician: "if scientists to-day continue to practise the errors condemned by Berkeley, it is because on most occasions they are content with rules, not proofs" (p. 76). But here and there, when a piece of needed technique depends on a difficult proof, the argument is left in small type, a warning to the reader that there is no royal road.

Every point of importance is illustrated and emphasized by worked examples, and there is a more than adequate supply of exercises for the reader, mainly taken from recent examination papers in the University of London. There can scarcely be a better text-book for the young physical scientist who has realized that Kelvin's demand for "a guid bellyful o' mathematics" is even more urgent to-day.

T. A. A. BROADBENT

ANCIENT IRELAND

Early Christian Ireland

By Máire and Liam de Paor. (Ancient Peoples and Places, Vol. 8.) Pp. 264 (76 plates). (London: Thames and Hudson, Ltd., 1958.) 25s. net.

THIS volume of the Ancient Peoples and Places Series lives up to the high standard of production and half-tone illustration we have come to expect from Messrs. Thames and Hudson. The book, presumably intended more as a convenient handbook for the educated layman than as a reference work for the scholar's shelf, is most pleasantly written; so much so, in fact, that one tends to be beguiled by the easy style and to slide, unthinkingly, over some errors of fact and uncertainties of interpretation.

For the layman the volume is adequate and competently handled. With a few exceptions, there is little new in it and there is general adherence to established chronological and art-historical schemes, especially those adapted to an English taste.

A more critical appraisal discloses instances of poetic writing which will be passed over by the foreign reader but which, in Ireland, may cause some questioning. For example, on p. 15, the authors tell us that "all the kings of Ireland . . . could trace their descent from Adam, naming an ancestor in each generation". This is romantic but not strictly accurate: the *fill* may have been able to do this, but not their royal overlords. Again, it is stated (p. 19) that "the highland periphery [of the island] can provide only scattered and separate refuges for older traditions". This is a statement which it is difficult to substantiate. On p. 32 we are told that ". . . it seems likely that the hill-forts of the Iron Age were passing out of use in St. Patrick's time", but we are left guessing as to what these monuments are and what evidence there is for their falling into disuse.

On p. 34 we are told that "the fifth-century missionaries brought the use of letters to Ireland"

but on p. 61 the statement is made that the Ogham stones "in a rune-like cipher [it is not rune-like—J. R.] based on the Roman alphabet" are "perhaps as early as the fourth century". In fact, there is some slight evidence, which the authors might have investigated, to suggest that certain classes in Ireland were acquainted with letters at an even earlier stage.

We get general statements such as that on p. 54: ". . . in time the monastic workshops became the chief centres of craftsmanship in the country", a statement for which there is only the slightest archaeological evidence, especially when one remembers the special social and legal position of the *aes dána*, the lay guild of craftworkers, and the existence of so many non-monastic *ateliers*, such as those at Lagore, Garranes, Garryduff, etc.

There are several instances of a lack of digestion on the part of the authors of the book, an indication that they have not made up their minds as to what theory they should hold on particular issues. For example, on p. 143, Byzantine and Carolingian iconography is stated to have been drawn upon by the carvers of the scripture crosses and reference is made to the Continental panelled ivories; but no suggestion is made as to the origin of the panels on the high crosses. On the other hand, on p. 154, in discussing the metalwork, it is implied that the panelling is derived from what the authors call the "Trehwiddle style of southern England". This, then, leaves one reader at least facing the question: do the authors mean that the *crosses* are Irish, the scriptural scenes on them Byzantine and Carolingian, and the framework of the panels English? If this is what they mean, it might have been conveyed more clearly, though it might not even then have received general acceptance.

It is a pity that the book contains a fair share of misstatements and errors of fact, most of which could have been checked by reference to the specimens exhibited in the National Museum of Ireland. A few random examples will suffice: (p. 35) the trumpet stated to be from "Annaclone, Co. Down" must be that from Ardbrin, Co. Down; it has no mouth-disk and bears no repoussé ornament; (p. 39) the Boyne bracelet has not an ornithomorphic whorl in red enamel. No enamel remains and there are no birds' heads on the ends of the triskele arms (p. 171). It is the front and not, as here stated, the back of the Cross of Cong which is panelled; and p. 96 contains the extraordinary statement that "crucibles for smelting copper and bronze are fairly common".

It is a pity, too, that elaborate Irish spellings were used when even the reformed Irish spelling would have been phonetically easier. For example, in a work in English, why not use the well-known form of the personal name "Mahon" rather than the ugly-looking (and for most people unpronounceable) "Mathghamhain"; and, if one insists on being traditionally Gaelic in one line, one should strive to be correctly Gaelic in the next by writing "Dál gCais" for the authors' incorrect "Dál Cais".

Finally, why use a term that is as historically meaningless (though current) as "Dark Age", and why apply it to the ninth century in Ireland?

What appear to me as faults in an otherwise excellent production have been pointed out; they are all such as can be corrected in a second edition, for I am sure that a volume that contains as much valuable information as this does, that is as well illustrated and as cheaply produced, will undoubtedly be in demand for a long time. JOSEPH RAFTERY