

CORRESPONDENCE

MAGMATIC AND AMYGDALOIDAL PLAGIOCLASES

SIR,—The closing paragraph of Mr. Le Bas' paper on the above subject (*Geol. Mag.*, xcii, 1955, 291–296) reveals a fundamental misapprehension regarding feldspathic bodies, within some of the Slieve Gullion rocks, interpreted by me as recrystallized amygdaloids that originally contained zeolites (*Trans. Roy. Soc. Edin.*, lxii, 1951, 99–102, 123–124). These bodies are not single large crystals as Mr. Le Bas supposes, but, as stated in my paper (p. 101), consist of “intergrowths of lime-soda feldspar”. The “white gabbros” containing them form the upper portions of layers of feldsparphyric dolerite characterized by macroscopic phenocrysts of plagioclase, some of which are themselves composite intergrowths. The rocks concerned are in fact members of the “porphyritic central magma-type” of Thomas and Bailey, and Mr. Le Bas is correct in saying that the large crystals of plagioclase represent original phenocrysts. Presumably, however, Mr. Le Bas has been labouring under the entirely mistaken impression that I supposed these plagioclase phenocrysts to be recrystallized amygdaloids. Mr. Le Bas' conclusions neither add to nor subtract from my inferences from the Slieve Gullion rocks.

It is, however, desirable that a criterion be established whereby plagioclase resulting from the metamorphism of zeolite-filled amygdaloids may be distinguished from the initial plagioclase of basalts that have undergone the same limited degree of metamorphism. It was previously my intention to attempt to find such a criterion by reference to the relative frequency of occurrence of twins of various types, paying due attention to the composition of the plagioclases concerned. I was encouraged in this intention by the positive results already obtained by Dr. M. Gorai (*Journ. Geol. Soc., Japan*, lvi, 1950, 149–156) who applied this method to the problem of distinguishing magmatic from metamorphic rocks. The task is an onerous one involving hundreds of measurements with the universal stage on suitably chosen material, including the basalts of metamorphic terraines. If Mr. Le Bas will now undertake this investigation he will not only make an important contribution to petrology, but amply atone for his misrepresentation of my work.

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AGE OF THE WEALDEN IN NORTH-WESTERN EUROPE

SIR,—May I express my appreciation of Professor P. Allen's recent discussion of the age of the Wealden (*Geol. Mag.*, xcii, 1955, 265–281).

The problem is clearly stated but, since very little of the relative palaeontology has yet been published, Allen's conclusions must in many instances remain highly speculative. A particular case is the correlation of the English and German Wealden. The detailed succession of ostracod faunas in S.E. England is now fairly well known but more information is being obtained daily. In Germany the fauna is poorer and the amount of material available for study is relatively small. Nevertheless, having examined ostracod faunas from both countries I have little doubt about the correct correlation of the Wealden. Wolburg's statement that the German “Wealden 4” is the equivalent of the uppermost Wealden of England as exposed at Berwick cannot be substantiated (Wolburg, J., 1949, “Zur Frage des Alters der obersten Wealdenschichten in England,” *Neues. Jahrb. f. Min.*, Abt. B., vii, 193; and 1950, “Vergleichende stratigraphische Untersuchungen der brackisch limnischen Ablagerungen Europas an der Wende Jura-Kreide,” *Geol. Landesanst.*, *Geol. Jahrb. f. 1943–8*, lxiv, 159).

The species he collected from Berwick and identified as *Gomphocythere*