

not actually dangerous. Similarly, major assumptions regarding direction of polarization are to be avoided at this stage.

C. R. K. BLUNDELL.

DEPARTMENT OF GEOLOGY,  
UNIVERSITY COLLEGE,  
NEWPORT ROAD,  
CARDIFF.  
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### THE STONE OF THE ANCIENT ASSYRIAN MONUMENTAL CARVINGS

SIR,—Thirty years ago there appeared in the *Geological Magazine* (lix, 1922, 222-3) a short paper by Dr. Hans Reusch, formerly Director of the Geological Survey of Norway, concerning the Assyrian carved monuments in the British Museum and in particular the winged human-headed lions from the palace of Sargon II at Khorsabad which now stand in the entrance to the Assyrian Galleries. Dr. Reusch described the stone in which these monuments are carved as a "quartz-eyed-gneiss", i.e. a metamorphosed conglomerate, a type of rock with which he was familiar in Norway and which he had described from the Ordovician of the neighbourhood of Bergen.

In fact, the stone in question contains no quartz, the mineral which occurs so abundantly in large fragments in the Sargon lions and bulls being gypsum.

The rock is the so-called "Mosul Marble" which was much used as a monumental stone by the Assyrian kings under the name of *pilu* or *parutu* and which is still much used for architectural purposes in Mosul at the present day. It is gypsum of Miocene age, passing into anhydrite at depth as seen in the deeper quarries and in cores, which is well-bedded in parts but in some beds exhibits a striking brecciation owing to some diagenetic effect. Reusch also described small, closely folded granitic veins traversing the rock; these are no doubt films of gypsum showing the folding which frequently results from the increase in volume associated with the change from anhydrite to gypsum.

Specimens of the mineral fragments and also of the apparently argillaceous matrix were examined optically, chemically, and by X-ray powder photography and found to be gypsum. It can be stated therefore that the sculptures are made entirely of gypsum.

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F. A. MIDDLEMISS,  
*Geological Dept., Queen Mary College.*  
A. A. MOSS,  
*British Museum.*  
G. F. CLARINGBULL,  
*British Museum (Natural History).*

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