Observed Map

The observed field, contoured with an interval of 10 gamma wherever possible, is distinctly anomalous except for very limited and outstanding zones. Anomalies seem to result from induced magnetization by the earth's normal field. For large anomalies reference can be made to Figures A64 through A76 in GSA Memoir 47 for intrabasement anomalies at inclination 75°. These show that the negative components, here south of the southerly edges of causative bodies, commonly have amplitudes of 5% of the positive amplitude. Unpublished anomalies of thin plates, which can represent local structure, show that smaller anomalies in the range of 10 to 50 gamma have negative components of approximately one-third the value of the positive component.

It is useful to attempt to correlate the anomalies adjacent to or over the shoreland in order to try to extrapolate these correlations offshore to define buried basement rock types.

Beginning in the northeast and traveling clockwise around Tasmania one, of course, is surprised to find that the Devonian granites in the northeast are peculiarly low in intensity of magnetization. Only local erratic appearing anomalies of tens of gamma occur over this terrane. Offshore, however, there is a distinctly anomalous zone which is interpreted to be caused by Jurassic dolerites and which stops abruptly in the south at about 41°15'.

The dolerite's identification is based on the similarity of these anomalies with those farther south which occur, for example, in a narrow band parallel to the shore southward from 42°05'. This band is ten miles wide. Its abrupt termination is thought to be the faulted or intrusive edge of the dolerites.

Note also that the marked dissimilarity between the Paleozoic granites and the Jurassic dolerites can be traced along the north-south string of islands between 42°00' and 42°45' where both types occur on outcrop.

The Jurassic dolerite terrane may be followed around the coast to its abrupt termination along a north-south contact which is coincident with the Permian-Jurassic contact