

complete reduction of  $Md^{3+}$  with  $V^{2+}$  but the reduction was incomplete when  $Ti^{3+}$  was used.<sup>6</sup> From these observations, he concluded the standard reduction potential of  $Md^{3+}$  was close to -0.1 volt. The standard potentials obtained by both groups are in reasonable agreement and, most importantly, they conclusively show that the stability of  $Md^{2+}$  is greater than any lanthanide(II) ion. This finding was surprising since divalency in the lanthanides is mainly associated with the special stability given by the half-filled and fully-filled  $f$ -electron shell. Divalent  $Md$  ions are at least one electron short of the stable  $5f^{14}$  configuration.

Additional experiments which may not be clearly relevant to the divalent oxidation state include the reduction of  $Md^{3+}$  to  $Md(Hg)$  by sodium amalgams and by electrolysis.<sup>7</sup> Both the extraction experiments with Na amalgams and the electrolysis at a Hg cathode indicated a large enrichment of  $Md$  in the Hg phase relative to that of  $Np$ ,  $Pu$ ,  $Am$ ,  $Cm$ , and  $Cf$ . The percentages of  $Es$  and  $Fm$  in the sodium amalgam were not greatly different from the percentage of  $Md$ . But a clear enrichment of  $Md$  was obtained in the electrolysis experiments as shown in Fig. 1. The initial rate of amalgamation is much larger for  $Md$  than for  $Es$  and  $Fm$ .

Recently, new electrochemical experiments were carried out with  $Md$  in which controlled-potential electrolysis was used to study the reduction of  $Md^{3+}$  to the metallic state in a Hg amalgam.<sup>8,9</sup> Half-wave potentials were measured by radiocoulometry and radiopolarography in the presence of noncomplexing and weak and strong complexing agents. The radiopolarogram obtained for  $Md$  in a noncomplexing media is presented in Fig. 2. The half-wave potential for  $Fm$  was remeasured at the same time as that of  $Md$  because of its presence as a decay product of  $^{256}Md$ . The results showed that the reduction