

## THE "TICRACO CREEK" SIDERITE.

By

T. HODGE SMITH, Mineralogist and Petrologist, Australian Museum,  
and H. P. WHITE, Chief Analyst and Assayer, Department of Mines.

(Plates ii-iv, and Figure 1.)

While Mr. J. F. Connelly was prospecting in the vicinity of Mount Padbury, Western Australia, on the North Murchison Gold Field, during August 1922, he learnt from a small party of miners that a meteorite had been found and had been taken to town. After a number of inquiries as to its whereabouts he finally traced it to a rubbish tip at Meekatharra. It had been dumped here by the original finders, who had discovered it near the head of Ticeraco Creek, North Murchison Gold Field (Lat.  $26^{\circ} 20'$  South, Long.  $118^{\circ} 20'$  East), at a height of 2,000 feet above sea level, on the surface of the ground. Neither the name of the discoverer nor the date of finding is known.

The weight of the meteorite is 4173.5 grams and the specific gravity of the whole, including the weathered crust, is 7.59. These determinations were made by Mr. A. J. Christie, Superintendent, Royal Mint, Sydney Branch.

The meteorite, apparently, had remained partially buried for some considerable time, as half had been more or less protected from the action of weathering while the other half had a thick coating of iron oxide. Naturally etched Widmanstätten figures are very conspicuous, and in one place some of the plates of nickel-iron alloys have been removed by weathering, showing the internal structure in relief. (Plate iv, fig. 3). "Thumb-marks" are well developed; two of these depressions on opposite sides meet to form a hole practically through the centre. In addition to the thumb-marks the whole surface is pitted, while there are a number of "drill-holes" measuring from 20 to 30 mm. in diameter with a maximum depth of 50 mm. At one end of the meteorite one of these drill-holes has completely pierced it. (Plate iv, fig. 1).

Though the usual theory in regard to "thumb-marks," is that they have formed during the passage of the meteorite through the atmosphere, may be true, it does not seem to account for the origin of the "drill-holes." It is therefore suggested that these have been formed, after the meteorite has come to rest, by the action of weathering on such a mineral as troilite.

The polished surface of the cut meteorite (Plate ii) was etched with very dilute nitric acid. In the etching two interesting features were noted. Firstly one end was more easily etched than the other, and, secondly, the Widmanstätten figures were more closely spaced in this portion. This is possibly due to a slight variation in chemical com-