

THE WEEKEROO METEORITE: A SIDERITE FROM SOUTH AUSTRALIA.

By

T. HODGE-SMITH,

Mineralogist and Petrologist, The Australian Museum.

(Plate xxxiii.)

This siderite was found in 1924 by Mr. James Lane at Weekeroo Station, Mannahill, South Australia (Lat. 32° 16' S., Long. 139° 52' E.). According to Mr. Lane, it was found "on the brow of a big hill resting on a quartz reef level with the surface."

It was a complete iron weighing 94.2 kg. (207½ lb.), of which the main mass, weighing 47 kg., is in the collection of the Australian Museum. It measured approximately 50 cm. by 27 cm. by 19 cm.

The external appearance is typical of a siderite, the characteristic "thumb-marks" being present. The iron was cut into two portions along the major axis. Considerable difficulty was experienced in completing this work, which was carried out by the New South Wales Government Railway Workshops at Eveleigh. This difficulty was the first indication that the siderite was of an unusual type, the cause of the trouble being the presence of numerous nodules of silicate minerals and troilite. The cut surface of the mass retained by the Museum was polished and etched with weak nitric acid, the section so obtained measuring 49 cm. by 19 cm., and containing 324 inclusions of troilite and silicate minerals.

A Rosiwal analysis carried out on this section gave as a result 96.23 per cent. of nickel-iron, 3 per cent. of troilite, and 0.77 per cent. of silicate minerals. This analysis showed also that the inclusions were fairly evenly distributed, being slightly more numerous in the centre portion than at either end. The results are as follows:

End portion	3.48 per cent. of inclusions
Centre portion	4.71 per cent. of inclusions
End portion	3.46 per cent. of inclusions
Whole section	3.77 per cent. of inclusions

The result of the etching revealed the fact that the iron is unique among recorded Australian falls. The surface contains numerous cracks which surround portions differently orientated, giving the iron a brecciated appearance. The iron in the different portions belongs to the broad octahedrite type. The troilite and silicate inclusions are mostly found along the cracks. The iron is therefore a brecciated octahedrite with silicate grains, and appears to belong to the Copiapo group (Obc) of the Brezina classification.¹ Brezina includes only one iron, the

¹ Brezina.—Annalen. des K.K. naturhist. Hofmuseums, x, 1895, pp. 232-307.