

NOTES ON AUSTRALIAN METEORITES

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Plates 6 and 7. Figures 1 and 2.

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ABSTRACT

A review of Australian meteorites, eliminating paired falls, gives a total of 184, comprising 67 irons, 9 stony-irons, and 108 stones (6 achondrites and 102 chondrites); 10 of these were observed falls. Olivine and pyroxene compositions have been determined by microprobe analysis for most of the chondrites, and they have been examined microscopically and classified according to the Van Schmus-Wood classification. Additional data on mineral compositions are given for the enstatite achondrite Mt Egerton and the ureilites North Haig and Dingo Pup Donga; a bulk analysis of a small sample of the eucrite Emmaville has been made. Ringwoodite and majorite are recorded from the Coolamon meteorite, the third occurrence of these meteorite minerals. A list of Australian irons and stony-irons, giving Ni and Ge contents, structural type, and Ge-Ga class has been compiled, and the Ni-Ge data presented in a diagram.

INTRODUCTION

Research on Australian meteorites may perhaps be dated from 1861, the year in which Haidinger published the first account of the Cranbourne irons. At that time two were known, one (the largest of the ten or more now known) weighing 3.5 tons and the other 1.5 tons, both having been found in 1854. The 3.5 ton mass was transported to London and displayed at an exhibition in 1862, being the largest meteorite known at that time, and is now in the British Museum collection. The literature on Cranbourne is very extensive, and has been summarized by Edwards and Baker (1944).

The Barratta meteorite is possibly an even earlier discovery. First described by Liversidge in 1872, it had been obtained by the Government Astronomer, H. C. Russell, when he visited Barratta in April 1871. The actual discovery of the meteorite, according to Russell, was the subject of some disagreement. A stockman said that he saw a brilliant fireball in May, 10 or 12 years earlier (i.e., about 1860), and that the following day some fencers who were camped about four miles northwest of the homestead reported having seen a stone fall near their camp. The stockman went to the place a few days later and saw the meteorite about half-buried in the ground. However, a Mr F. Gwynne, living in the neighbourhood, claimed that he found the meteorite when riding over the plain about the year 1845. In spite of additional inquiries, Russell was unable to resolve the matter. Possibly isotopic analyses could provide an answer, by giving an approximate terrestrial age.

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