

ON SOME SPECIMENS OF CHIASTOLITE FROM BIM-
BOWRIE, SOUTH AUSTRALIA.

By C. ANDERSON, M.A., B.Sc., Mineralogist.

(Plate xlvii.)

THE Trustees of the Australian Museum have recently acquired from Mr. G. R. Howden, by donation and purchase, some exceptionally good specimens of chiastolite. In addition to those in the Museum, I have been enabled, through the courtesy of Mr. E. F. Pittman, Government Geologist, and Mr. G. W. Card, Curator of the Mining and Geological Museum, to examine some fine specimens in the Survey collection. Mr. W. S. Dun, Palæontologist to the Survey, was also kind enough to lend me some specimens which he has in his possession. All the minerals examined came from the same locality, Mt. Howden, ten miles north of Bimbowrie, South Australia. The crystals are distinguished by large size, they shew the characteristic markings very distinctly, and some exhibit features which, so far as I know, have not hitherto been described.

Chiastolite is a variety of andalusite, and is only distinguished from it by the constant occurrence of carbonaceous or clay-slate inclusions, disposed in the form of a cross. Andalusite and chiastolite are characteristic of the metamorphic schists, and are usually found in the contact zones of clay slates, near granites, syenites, and diorites. The crystallographic system is orthorhombic, the forms being very simple, usually shewing only (110) and (001). The pattern of the dark inclusions seen on a cross section varies considerably, even in different segments of the same crystal, but two chief types are apparent—(a) The crystal has a dark rhomb in the centre, the outlines of which are parallel with the crystal boundaries, and, from the angles of this rhomb, dark laminae pass to the prism angles of the crystal (*macle tetragrammé* of Haüy); (b) further the angles of the prism may be occupied by four dark rhombs, corresponding in form with that in the centre (*macle pentarhombique* of Haüy.)

According to Mr. Howden, the Bimbowrie mineral occurs either embedded in argillaceous schist, or as rolled pebbles, along with quartz, jasper, aventurine, etc. Towards the surface, where atmospheric influences are at work, the crystals are fairly easy of extraction, and all the more perfect specimens obtained were