ON SOME NEW SOUTH WALES AND OTHER MINERALS.
(Note No. 6.)

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Many of the specimens from Broken Hill, referred to in the following notes and exhibited this evening, were collected by Mr. C. W. Marsh of Broken Hill, and forwarded to me for identification and description; Mr. Marsh's Collection also contained a large number of very interesting and characteristic rock specimens.

ANTIMONITE—Sulphide of Antimony.

From the Eleanora Mine, Hillgrove. The antimonite is in the form of small nodules, in a soft brown shale or clay-like matrix; the nodules are about $\frac{3}{4}$" to $\frac{1}{2}$" in diameter, and when broken open present a beautiful radiate structure.

ASBESTOS.

In calcium carbonate from the New Reform Gold Mine, Lucknow. This mineral occurs in veins or masses apparently five or six inches in thickness. It is of a white colour and fibrous structure; associated with it is some greenish steatite. The specimen looks like a mass of somewhat fibrous steatite, but on treatment with hydrochloric acid it almost entirely dissolves with effervescence and leaves a slight residue of white fibrous asbestos.

The calcium carbonate is dense, compact, and shows no tendency to cleave into rhombohedra.

BISMUTH—Native.

From Kingsgate, Glen Innes. Showing well-marked cleavage forms, some of the faces are nearly one inch across. Associated with quartz, bismuth carbonate and large crystals of molybdenite.
The second specimen of native bismuth shown is from Maryborough, Queensland. It occurs in masses of calcite which possess large and well-marked rhombohedral cleavage planes; cobalt is also said to occur in association with it, together with gold.

The occurrence of native bismuth in calcite is very unusual.

**Calcite.**

From vugs in the Umberumberka Mine. In rounded groups of scalenohedra, of a greenish tint (much resembling prehnite in appearance) seated on grey granular limestone. In other specimens the calcite is in the form of flattened rhombohedra.

**Emerald—Beryl.**

From near Vegetable Creek, New England; where it occurs in veins or fissures containing kaolin, running through the granite near its junction with clay slate. The crystals are mostly under a quarter of an inch in diameter and are usually much fissured or fractured. In colour they vary from shades of beryl green to fairly deep emerald green, but I have not yet seen any of the rich deep shade characteristic of the finest emeralds, nevertheless they afford good ornamental stones, fit for jewellery.

Many of the crystals occur in groups or bundles. Associated with them are tinstone, topaz, and other minerals.

**Galena.**

From Umberumberka Mine, with coarsely crystalline fracture; this specimen is chiefly interesting on account of its containing intermingled scales of black mica.

**Hornblende.**

A white variety with a radiate fibrous structure. In appearance it resembles tremolite, but requires further examination. The specimen exhibited is from the Ada Augusta near the Angus Mine, where it occurs in a fissure lode some four to five inches wide. With it is associated a good deal of quartz, some galena, blende and pyrites.
HYALITE.

A variety of opal but without its play of colours. Associated with green copper stains; occurs in a gossan near the Acacia Dam, Broken Hill.

GARNET—Common.

In more or less perfect crystals (combinations of the rhombic dodekahedron and ikositetrahedron) of a dark red and almost black colour, embedded in calcite and associated with a dark green massive and a black fibrous hornblende. From the Acacia Dam, Broken Hill.

Other specimens are massive with a granular structure.

Another specimen, also with a granular structure, in this case the grains show more or less perfect crystal faces of a red-brown colour; cutting through the mass are some small veins of white quartz. Mr. Marsh states that it occurs as veins and irregular deposits running through the basic rocks and mica schists of the Broken Hill district, and seldom with the granitic rocks, and that it is usually associated with the argentiferous lead deposits.

HÆMATITE—Auriferous.

Mount Morgan, Queensland. In mammillated stalactitic masses with, in some cases, a beautiful sheen of iridescent colours. These stalactites usually have the appearance both externally and internally, when broken across, of being composed entirely of brown hæmatite, but on placing solid pieces of them in hydrochloric acid the iron oxide dissolves and most of them leave a more or less complete skeleton or inner framework of silica. Some of the smaller stalactites after such treatment appear as if made of transparent gelatine, from the silica being left in the colourless and gelatinous condition. The gold present seems to be much more intimately connected or associated with the silica than with the hæmatite. The hæmatite and quartz appear in some cases as if they had been in part deposited simultaneously, but in many other instances the hæmatite forms the external coating and therefore is the last or most recently deposited.
In some of the massive specimens of haematite there are distinct veins and strings of ordinary quartz; such masses when acted upon by hydrochloric acid leave a more or less cellular or porous non-gelatinous residue of quartz not unlike certain varieties of geyserite or siliceous sinter deposited by hot springs, but the specific gravity is 2.55, and the hardness 7 and no combined water seems to be present, hence the mineral possesses the properties of ordinary quartz rather than those of sinter. Some of the quartz looks as if it had originally been charged with iron pyrites which has since been converted into oxide of iron, (such a mixture when occurring at the outcrop of a lode is usually termed gossan); the oxide has in parts been subsequently removed leaving a spongy siliceous skeleton.

Mr. R. L. Jack, F.G.S., Government Geologist, Queensland, has carefully examined and described the Mount Morgan deposit and attributes it to geysir action, but the specimens examined by me may have come from a part having a different origin, and as I have not visited the locality, I am unable to express an opinion upon the main question.

Magnetite.

In the form of a massive, imperfect crystal, but with some of the faces well marked; possesses but slight magnetic properties. Brown outside giving it the appearance of brown haematite. Weight 195.303 grammes, the sp. gr. at 18° C. was found to be 4.93. Near Cowna Station, Barrier Ranges.

Molybdenate—Molybdenum di-sulphide.

In the form of large lamellar plates most of which show two to four edges of a hexagon. Some of the masses are nearly three inches thick, and as much as 3½ inches across and 5½ inches long, with extremely well marked cleavage, hence, very thin sheets, with most brilliant lustre, of nearly 15 inches superficial area can readily be obtained.
Quite recently some beautiful groups of almost perfect crystals have been brought from the same locality, i.e., Kingsgate, near Glen Innes.

**Quartz—Cellular or Porous.**

Mount Morgan, Queensland. This has very much the porous and cellular appearance of the silica deposited from hot springs, and has accordingly been described as Geyserite by Mr. R. L. Jack, F.G.S., Government Geologist for Queensland. Reference is made to this under Hæmatite, p. 236.

More or less cavernous specimens of quartz are met with in the New Reform Mine, Lucknow, and are known to the miners as "Lode clinker." These are of a dull brown and earthy appearance externally, and are evidently pseudomorphous after calcite.

**Redruthite—Grey Copper Sulphide.**

Occurs with crystallized azurite, malachite and silver chloride in the Broken Hill Proprietary Company's Mine.

**Rutile.**

Acicular hair-brown crystals of this mineral are met with in quartz at Tingha. Mr. D. A. Porter of Tamworth has had some specimens cut and polished with good effect.

**Siderite—Iron Carbonate.**

Obtained from vugs in the Umberumberka Mine. The specimen is built up of plates forming cavities, in some cases almost cubical and in others more or less rhombohedral, and varying in size from one eighth to one inch or so across. On the walls of these cavities are scattered small but well formed crystals of anglesite (lead sulphate); the black colour is apparently due to some galena and perhaps zinc blende.

When powdered the mineral effervesces slightly with cold hydrochloric acid and evolves sulphuretted hydrogen, and on qualitative analysis was found to consist essentially of carbonate of iron and zinc with small quantities of blende, manganese, lead, and traces of silica and lime.
Silver—Native.

The native silver occurs scattered through (vein) quartz in exceedingly thin and minute flakes looking more like mica than silver. In one specimen the silver is associated with minute garnets; silver chloride, silver sulphide and lead carbonate are also associated with the native silver. From Silverton.

Silver Chloride.

From the Broken Hill Proprietary Company's Mine. In cubes about \( \frac{1}{8} \)" through, with the angles replaced by faces of the octohedron; these are accompanied by octohedra and combinations of the octohedron and cube in which the faces of the former are predominant or more largely developed. Twin crystals of the octohedron are also found. Most of the crystals are very irregularly developed and as usual the edges are generally rounded and the faces slightly hollow or cavernous.

The crystals are sometimes seated on a clay-like material, on stalactitic black oxide of manganese, haematite, cerussite &c., and diffused through white kaolin.

Most of the specimens when fresh are pale shades of grey or green, but they soon darken on exposure to light.

One specimen from Broken Hill, in galena, shows the silver chloride concentrated in the central parts of the mass of galena; Mr. Marsh points out that it probably represents a stage in the formation of the slugs or nuggets of horn silver. Further concentration and the removal of the outer crust of galena would of course leave a core of silver chloride.

The crystals are sometimes scattered singly or in small groups, and very often are arranged in branching and arborescent forms and occasionally they can be separated from the matrix in irregular layers looking like lace work.

The largest crystals placed before you are about \( \frac{3}{8} \)" in thickness, but such large crystals are as usual very badly defined.

In many cases the silver chloride looks more like a sublimate than a crystallised deposit from solution.
The silver chloride occurs also in a pure white kaolin in irregular strings and branches; when the mass is cut through the kaolin presents a beautiful marbled appearance, from the green veins, strings and points of silver chloride being irregularly spread over a dead white ground; after exposure to the light for a time the veins and markings, of course, become black.

**Silver Sulphide—Argentite.**

In small particles scattered through vein quartz; associated with it is a little iron pyrites and iron sesquioxide. No crystals of argentite could be detected.

Locality—Wollombi, thirty miles from Armidale. Collected by Mr. J. M. Smith of Sydney.

The second specimen is from the Day Dream district. Massive of about 6 oz. in weight, weathered externally and coated in part with mica.

**Staurolite.**

In a black mica schist with crystals of common garnet, from about two miles north of the Acacia Dam, Broken Hill. Mr. Marsh states that the schist stands up in narrow bands above the associated rocks on account of its being less rapidly weathered.

The staurolite crystals are in twin groups in the form of St. Andrew's cross, and vary from $\frac{1}{4}$" to $\frac{1}{2}$" in thickness and up to $\frac{3}{4}$" long. These are much larger than those previously described.*

**Tourmaline.**

From the quarries in granite, about three miles east of Silverton. An irregular fragment of a large crystal of tourmaline, about one and a half inches through and two inches long; the broader end of the crystal has a quartz core.

**Zinc Carbonate.**

From Broken Hill Proprietary Company’s Mine. In the form of small, colourless complete scalenohedrons or dog’s tooth crystals, slightly curved. Surfaces somewhat rough, about $\frac{3}{16}$" long by $\frac{1}{16}$" through, very uniform in size. Perfect rhombohedral cleavage.

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* Liversidge, Minerals of N.S. Wales, 1888, p. 181.
The crystals are seated on stalactitic ferruginous black oxide of manganese.

**Zoisite.**

The specimen was obtained by Mr. D. A. Porter from Upper Bingera.

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**SOME FOLK-SONGS AND MYTHS FROM SAMOA.**

Translated by the Rev. G. Pratt.

With Introductions and Notes by John Fraser, LL.D.

[Read before the Royal Society of N.S. Wales, December 2, 1891.]

XXIV.—Ia 'Ato-'Alo, le alo o le La—A 'Tala.'

'About 'Alo-'alo, the son of the Sun.'

**INTRODUCTION.**—At all times and in all places, men have believed in luck, fortune, fate, destiny. The ancient Aramaeans, in Isaiah's time and before that (Is. lxv., 11), used to "prepare a table for Gad and fill up mixed drink for Meni," and their successors, the modern Arabs, still call Jupiter and Venus "the stars of the greater and the lesser Fortune," while Mars and Saturn are to them "unlucky stars." The ancient Greeks and Romans had their Moirai and Parcae—deities whom the great Jove himself could not move from their purpose; the Roman poets often speak of "ineluctabile Fatum" and of "Fortuna laeta saevo negotio, nunc mihi, nunc aliui benigna"; the modern Turks are firm believers in fate, 'kismet'; in our language, too, luck is a well-known word and has established itself in daily converse; for, to-day, we say of a friend, "he is a lucky dog"; to-morrow, perhaps, we find him "down on his luck"; sometimes we think that there is "luck in odd numbers," and again that "Friday is an unlucky day" for beginning an enterprise.

All these beliefs have arisen from man's experience in life; he cannot see why a labour which has been undertaken and faithfully carried on comes to failure, while another of an exactly similar nature and in similar circumstances has been successful, although small pains were bestowed.

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