

On various masses of meteoric iron reported to have been found in Great Namaqualand and the adjacent region.

By L. FLETCHER, M.A., F.R.S.

Keeper of Minerals in the British Museum.

[Read March 22, 1904.]

The Balli Statement.

IN November, 1836, Captain (afterwards Sir) James Edward Alexander was at Henkrees (29° S., 18° E.) on the southern side of the Orange River, South-West Africa, and sought for information as to what he might expect to find during his intended journey across Great Namaqualand. He says:—

‘A respectable old Bastaard lived at Henkrees, Balli by name; he was the owner of a thousand head of cattle, of many horses and sheep. . . . He also told me of great quantities of copper far up the Great Fish River, and of hills from which malleable iron could be cut out¹.’

This report of Balli’s statement, assuming that the accuracy of both report and statement can be relied upon, suggests the occurrence of embedded masses of meteoric iron far up the Great Fish River, at a locality which is hilly, and therefore different from the plain mentioned later by Alexander after his stay at Bethany in March and July, 1837.

The Hahn Statement.

According to a letter sent (1904) to the present writer by Miss M. Wilman, of the South African Museum, Cape Town, Dr. P. Daniel Hahn, of the South African College, Cape Town, was born at Bethany, and was the son of the Rev. Mr. Hahn, the Rhenish missionary at one time located there; he states that his father, when first living at Bethany, saw a great number of meteorites between that station and Berseba (Beersheba), and that the natives used the metal for the making of daggers and other objects.

Bethany is eight days’ journey from Angra Pequena. Its mission station was started in 1820 by the Rev. Mr. Schmelen, but by reason of the fighting among the natives was abandoned by him three years after-

¹ ‘An expedition of discovery into the interior of Africa, . . .,’ London, 1838, vol. i, pp. 144–145.

wards: at the time of Alexander's journey (1837) the station was in ruins¹, and remained so until the Rev. Mr. Knudsen resumed missionary work there in 1848; the station had been abandoned by Mr. Knudsen a short time before the visit made by Andersson in 1852².

The Rev. Mr. Hahn referred to in Miss Milman's letter arrived at Bethany in February 1848. Frequent mention of Rev. Mr. Hahn [Rev. C. Hugo Hahn of Barmen (p. 149) and Rev. M. Hahn of Objimbingue (p. 250)] is made in Andersson's 'Notes of travel in South Africa' (London, 1875), and in other books written by the same author; the Rev. C. H. Hahn was not located at Bethany in 1848.

Immediately to the north of Bethany there is a plain, but east and south-east of it there are rugged hills or table-mountains extending to the Great Fish River³. Having regard to the physical features of the country between Bethany and Berseba, which is north-east of the former place, it will be seen that the account given by Dr. Hahn is consistent with that which had been given previously by Balli.

The statement recorded by Professor E. Cohen⁴ that the Wild mass (to be mentioned later) is said to have lain on the mountains between Bethany and Berseba is doubtless merely a modified and particularized version of the above general account given by Dr. Hahn.

The Thies Statement.

Mr. C. Zerrenner, who prepared for publication (1860) the notes which had been made by the mining engineer, Mr. A. Thies, relative to a journey to the copper mines of Namaqualand, stated in a footnote (p. 53)⁵:—

'At this point of his notes, Mr. Thies intercalates the remark that he has found heavy masses of native iron (Tellur-Eisen), weighing from 450 to 1,000 lb., lying in the bed of the Fish River which rests on granite; he describes the iron as tough, of fibrous fracture, and suitable for being worked at any forge into any kind of tool.'

The name Fish River has been used by Sir J. E. Alexander⁶,

¹ loc. cit., vol. i, p. 249.

² Andersson, 'Lake Ngami, . . .,' London, 1856, pp. 314, 347.

³ Alexander, loc. cit., vol. i, pp. 238, 255; Schenck, Petermann's Mittheilungen, 1885, vol. xxxi, p. 134.

⁴ Mittheil. aus dem naturw. Verein für Neu-Vorpommern und Rügen, 1900-1, 32 Jahrgang, p. 15; Annals of the South African Museum, 1900, vol. ii, part 2, p. 23.

⁵ 'Reise des Ingenieurs A. Thies nach den Kupferbergwerken Namaqua-Land's in Süd-Afrika.' Berg- und hüttenmännische Zeitung, 1860, 19 Jahrgang, pp. 41-43, 53-54.

⁶ e.g., loc. cit., vol. i, p. 236.

and also on recent maps, as a substitute for Great Fish River, and Mr. Zerrenner used it in the same sense¹. The above-mentioned statement must therefore relate to an earlier journey of Mr. Thies; for the journey recorded in the notes was entirely on the southern side of the Orange River, whereas the Great Fish River flows into the latter from the north. Masses of that size are not likely to have been transported to any great distance; for the total weight which can be safely carried in a Cape waggon is about 1,500 lb.²

There is no record of the part of the Fish River visited by Thies; the locality may be distinct both from the hills mentioned by Balli and Hahn, and from the plain mentioned in the following statement due to Alexander.

The Alexander Statement.

In the appendix to Sir J. E. Alexander's account of his journey into the interior of Africa (1836-7) is incorporated a short paper by Sir John Herschel containing the following statement³:—

'But what constitutes the peculiar and important feature of this discovery of Captain Alexander is the fact, stated by him, of the occurrence of masses of this native iron in abundance, scattered over the surface of a considerable tract of country.'

No particulars relative to the locality of the iron are given in the book, but in the accompanying map the words *much iron* are inscribed on the east side of the Great Fish River at 26° 5' S., 18° 5' E. This place being sixty miles distant from his route as marked on the map, Alexander himself cannot have seen the masses: this may also be inferred from a remark made in the paper which was communicated by him to the Royal Geographical Society of London in 1838⁴:—

'There is also *said to be* to the north-east of Bethany, near the Great Fish River, a plain covered with large masses of iron, some of which require several men to lift them. I have got specimens of this iron.'

The Andersson Statement.

Doubtless Mr. Charles John Andersson referred (1856) to the same group of masses in the following paragraph⁵:—

'At eight to ten days' journey with "ox waggon," east of the

¹ loc. cit., p. 41.

² F. Galton, 'Narrative of an explorer in Tropical South Africa,' New Edition, London, 1889, p. 14.

³ loc. cit., vol. ii, p. 274.

⁴ Journ. R. Geogr. Soc., 1838, vol. viii, p. 24.

⁵ 'Lake Ngami, . . .,' London, 1856, p. 325.

missionary station Bethany, meteoric iron is found in apparently inexhaustible quantities. I have seen lumps, of several hundredweights, brought from thence, so pure and malleable that the natives converted it into balls for their guns, &c., without any previous application of fire.'

In Andersson's map the words *iron found* are inscribed at 26° S., 19½° E., far to the east of the Great Fish River: but the above account suggests that up to that time he, like Alexander, had not visited the district where the masses were lying.

The Schenck Statement.

Dr. Adolf Schenck, who was at Bethany in 1885¹, was informed that the Alexander masses are on the left (i.e. east) bank of the Great Fish River, opposite Berseba; owing to the height of the water he was prevented from going to see them².

The Lion River Mass.

A mass of meteoric iron, weighing 178 lb. (81 kilos.), was brought to London in 1852 and purchased by Professor Tennant; it was reported³ to have been 'found on a clay plain near Lion River in the close vicinity of one or more masses too heavy for transport: the removal of the present lump to the Cape by waggon, a distance of nearly 800 miles over the worst possible roads, being spoken of as attended with no small inconvenience. . . . The box contained several fragments of the clay forming the plain on which the mass was found. . . . The part cut has been done by the Namaquas for fabricating arrow-heads and assagais; the traces of two or three abortive attempts of cutting may also be seen in the surface of the mass.'

Lion, or Kamop, River⁴ is a tributary of the Great Fish River, and is shown in Alexander's map at 27° S., 18° E.

The fact that the sender of the Lion River mass forwarded several fragments of the clay, forming the plain in which the mass had been found, shows that he himself regarded the mass as lying where it had fallen. Further, the immediate neighbourhood of one or more masses too heavy for transport to the Cape suggests that the smaller mass had

¹ Petermann's Mittheilungen, 1885, vol. xxxi, p. 132.

² Mittheil. aus dem naturw. Verein für Neu-Vorpommern und Rügen, 1900-1, 32 Jahrgang, p. 17.

³ Amer. Journ. Sci., 1853, ser. 2, vol. xv, p. 1.

⁴ Alexander, loc. cit., vol. i, pp. 219, 227.

not itself been transported to the plain. But might not the plain mentioned by Alexander be regarded at Cape Town as being near Lion River? It seems more likely that this should be the case than that two groups of large masses should each be disposed on a plain, and the plains be within a hundred miles of each other, and nearly equidistant from Bethany.

The Wild Mass.

A large mass of meteoric iron, weighing 511 lb. (232 kilos.), has long been exhibited on a pedestal in the South African Museum, Cape Town. In the course of an inquiry into the history of various meteoritic masses, the present writer communicated twenty years ago (1884) with Mr. Roland Trimen, F.R.S., then the curator of the South African Museum, and was informed that 'the specimen in question is without further record than that it was found in Great Namaqualand (that is, north of the Orange River), and was sent to the Museum by Mr. Wild.' In December 1885, Miss Anderson Morshead, of Wiltshire, who had seen the mass at Cape Town and had promised the present writer to seek information from her friends in South Africa, was able to send him the following extract from a letter addressed by Mr. H. Piers, of Cape Colony, to Mrs. H. Reid, one of the daughters of the late Sir Thomas Maclear:—

'There is no record of the original site, only that some trader, finding it at a considerable distance in [Great] Namaqualand, brought it down to the Orange River, and left it on the other side. Long afterwards Mr. Wild brought it to Cape Town.'

Miss Anderson Morshead continued:—

'I asked Mr. Wild's daughter about the mass. Her recollection, as far as it went, was much the same as that of Mr. Piers. I think she believed the mass to have been found [at the Orange River] and sent down by her father (who merely defrayed the expense of transport) a year or so before 1862.'

This specification of the time as 'a year or so before 1862' rests upon hearsay, for Miss Wild was not then born; in the next edition (1886) of the British Museum Meteorite List, the year of the removal of the mass was recorded as 'about 1860.' The statement of Professor Cohen that the mass was lodged in the South African Museum *in* 1860 is doubtless an unintended variation of that record.

In a letter to Mrs. Mann (also a daughter of Sir Thomas Maclear, and sister of Vice-Admiral J. P. Maclear), Mr. Leo Layard furnished the following account given to him in England by his father, formerly curator

of the South African Museum, and at that time (March 1899) too ill to write himself:—

‘The large meteorite on the pedestal in the South African Museum was sold by the chief on whose land it fell to a trader for a barrel of rum; the trader took it some distance, and then pitched it out as being too heavy for his waggon. The chief then sold it again to two or three others, each of whom gave more rum for it and carried it a little way. Andersson was the last, and when he got it to Cape Town all the others claimed it, and threatened to go to law. Like sensible people they had a talk over the matter; and, coming to the conclusion that the lawyers alone would benefit by a lawsuit, they all agreed to give the meteorite to the Museum.’

As Mr. Layard, sen., in the same account confused the Victoria West meteorite with that of Cold Bokkeveld, it is possible that his memory was similarly at fault as regards the name Andersson, as might be expected after the lapse of nearly forty years; the name of Wild has long been painted on the pedestal supporting the mass. The true year of the removal to Cape Town becomes an important item in the investigation of the history of the transport and the tracing of the former locality.

It may be inferred from the statement published by Andersson in his work on Lake Ngami¹ that up to 1856 no such mass had been transported by him. In the latter part of that year, while at Cape Town, he was appointed superintendent of the Walfisch (Walfich) Bay Mining Company², of which the headquarters were at Objimbingue, Damaraland, and he retained the appointment for twelve months; in March 1858 he went on his voyage of exploration to the Okavango River, returning to Objimbingue a complete invalid at the end of 1859 or the beginning of 1860. After writing an account of his explorations he travelled to Cape Town, presumably by sea, not overland through Bethany. In 1861 he married at Cape Town, and after purchasing the large establishment of the Walfisch (Walfich) Bay Mining Company, settled down at Objimbingue as a trader³, sending large troops of cattle and sheep overland through Bethany, and across the Orange River, for sale in Cape Colony⁴. It is therefore unlikely that he can have transported any large mass of iron from Great Namaqualand till after the date at which the Wild mass is said to have been brought

¹ loc. cit., p. 325.

² ‘Notes of travel in South Africa,’ London, 1875, p. 333.

³ loc. cit., p. 2.

⁴ loc. cit., pp. 4, 334.

to Cape Town. It follows from Andersson's account¹, and also from the above-mentioned letter of Mr. Layard, that the overland trade between Damaraland and Cape Colony was at that time in many hands: the particular journey mentioned in pp. 4-6 of the 'Notes of Travel' was made probably about 1863; no mass can have been bought from the angry chief at Bethany on that occasion. Galton points out² that C. J. Andersson 'must not be confounded with either of two subsequent travellers bearing the same or at least similar names.'

[*Addendum.* According to information sent on July 27, 1904, by Miss Wilman, the transport of the mass must have taken place before April 29, 1857; it has been ascertained that on the last-mentioned date a letter was addressed by Mr. Layard, from the South African Museum, to the Editors of the 'Cape Monthly Magazine'³ which contains the following statement:—'the huge mass of nearly pure native iron from Namaqualand is exhibited by Mr. John Wild.']

*The Mukerop Mass*⁴.

A mass weighing 392 lb. (178 kilos.) was met with in 1899 at Mukerop, in the district of Gibeon: $25\frac{1}{2}^{\circ}$ S., $18\frac{1}{2}^{\circ}$ E. No particulars of the finding of the mass have been recorded; the mass may have been transported to Mukerop, long before, by the Namaquas or the farmers.

Etched Figures of the Lion River, Mukerop, and Wild Masses.

From a study of the etched figures, Professor E. Cohen at first inferred that the characters of the Wild mass are distinct from those of the Lion River mass; but later, after examination of the Vienna specimen of the latter, he concluded that they are essentially identical: those of the Mukerop mass are likewise similar to the characters of both the Wild mass and the Lion River mass. The British Museum specimens of the three masses quite confirm this view, and leave no doubt that all belong to the same meteoritic fall. How far the dispersion of the masses has been natural, and how far it has been due to the Namaquas and the traders, it seems now impossible to ascertain.

The Springbok River Fragment.

A small fragment of meteoric iron was acquired by Dr. Krantz with the other minerals left by Dr. H. J. Burkart, who died at Bonn in 1874;

¹ *loc. cit.*, pp. 4-5.

² *loc. cit.*, p. 193.

³ vol. i, pp. 319-320.

⁴ *Jahresh. des Vereins für vaterl. Naturkunde in Württemberg*, 1902, vol. lviii, p. 292.

thence it passed into the collection of Mr. J. R. Gregory, of London, and slices were afterwards distributed by him to various Museums. The only information relative to the history of the fragment is that given on the original label, namely, 'Meteoreisen, Springbock River, Cap d gut Hoffnung (*sic*), Afrika.' In Mr. Gregory's Catalogue, printed in 1889, the part retained by him is mentioned as 'Spring Bok River, Cape Colony, South Africa; small specimen (10 grams); structure very like Lion River.'

The original label gives no clue to the identity of the river, and Mr. Gregory's substitution of the words 'Cape Colony' for 'Cap d gut Hoffnung' rests merely on hypothesis.

The results of a study of the small slice preserved in the British Museum support Mr. Gregory's view as to the general resemblance of the etched figures to those of the Lion River mass; but the figures are distorted near the surface in such a way as to suggest that the specimen has been much hammered during the removal from a large mass. The piece may have been got from one of the Alexander masses, perhaps after transport.

As springboks are plentiful over a considerable part of South Africa, the name 'Springbok River' may have been locally given to various streams: Alexander remarked¹, for instance, that 'the hills about the Fish River abound in klip springer bucks'; Galton reported² that 'we passed one great herd of springboks that were migrating . . . It was by no means so numerous a herd as is often seen in Bechuana country; but the tufts of white hair on the backs of the males were as thickly scattered over the country as daisies on a lawn.' A place called Springbokfontein is in Little Namaqualand on an old line of travel from Bethany to Cape Town; another is at the extreme north of Great Namaqualand, due east of Rehoboth.

Nomenclature of the above-mentioned Masses.

Having regard to the probability, but still uncertainty, that these masses belong to a single meteoritic fall, which took place in some district comparatively near to Bethany, and to the desirability of preserving the history of slices taken from different masses, which after all may prove to be distinguishable by later research, it seems advisable not to confound them all under a single name Bethany, but to individualize the masses as Bethany (Lion River), Bethany (Wild), Bethany (Mukerop), and Bethany (Springbok River).

¹ loc. cit., vol. i, p. 239.

² loc. cit., p. 157.

The Orange River district Mass.

The history of another mass of meteoric iron is very similar to that of the Lion River mass¹:—

‘A mass weighing 328 lb. (149 kilos.) was brought to London in August 1855 from the Cape of Good Hope by the master of a Scottish ship, to whom it had been entrusted by a farmer of the Orange River district, where the mass is supposed to have been recently discovered. It was taken directly to Professor Tennant.’

At the time of Alexander’s journey Little Namaqualand was outside the boundary of Cape Colony, but ‘a few missionaries had from time to time endeavoured to spread the truths of the Gospel in the district of the Orange River²’; this was the region north of the boundary and extending to the Orange River.

The etched surface of the Orange River district mass is entirely different in aspect from that which is common to the Wild, Mukerop, and Lion River masses; the lamellae are of medium, instead of small, breadth. The mass represents a different meteoritic fall; it may have been found in the Orange River district itself, and not transported thither as the Wild mass had been.

¹ Amer. Journ. Sci., 1856, ser. 2, vol. xxi, p. 218.

² Alexander, loc. cit., Introduction, p. x.
