

Dr. Hettner has been at work on the Andes of Colombia, and Dr. Theodore Wolf has published a magnificent monograph (in Spanish) on the geography and geology of Ecuador, accompanied by the best map yet produced of the country. Dr. Tippenhauer has written a fine work on the physical geography of Haiti, and many other papers by German geographers have appeared within the last few months.

SIR WILLIAM MACGREGOR, for the British Government, and the officers of the Dutch war-vessel *Java*, have rectified the frontier between British and Dutch New Guinea. The former boundary was the 141st meridian, and the new boundary, where it cuts the coast, is a stream, chosen to furnish a recognisable border-line, in  $141^{\circ} 1' 40''$  E. and  $0^{\circ} 7' 40''$  S.

ON August 6 the new ship-canal across the Isthmus of Corinth was formally opened, thus completing a plan which was projected by Periarctos about 600 B.C., and actually commenced by Nero, who was, however, compelled to abandon the work, in 68 A.D. The canal is not quite four miles long, and will effect a saving of 120 miles in the passage from the Adriatic to the Ægean. Two new towns have been planned at the entrances to the canal, which will be named Poseidonia and Isthmia.

MR. F. C. SELOUS, the recognised authority on the exploration of Mashonaland, has been induced to return there at very short notice, on account of the threatening attitude of the powerful Matabele chief, Lo Bengula, and the consequent risk of interruption in the development of the country. An important work on Mashonaland, by Mr. Selous, will be published immediately.

MR. R. M. W. SWAN, who, with Mr. Theodore Bent, surveyed the ruins of Zimbabwe, is at present engaged in a systematic survey of other groups of ruins in South Africa, and he reports the discovery of a temple on the Limpopo, "oriented" to the setting sun at the solstice.

MR. W. H. COZENS HARDY, the Oxford geographical scholar, is now engaged in carrying out his explorations in Eastern Montenegro, one of the least known parts of Europe. The work of his predecessor, Mr. Grundy, on the Battlefield of Platæa, is on the point of publication as a supplementary paper of the Royal Geographical Society.

#### THE BEAVER CREEK METEORITE.

SOME of the readers of NATURE will no doubt be interested in a short account of a meteoric fall which occurred recently in British Columbia, and was noted in these columns on August 10. For the circumstances in connection with the fall, and the finding of fragments of the meteorite, I am indebted to Mr. James Hislop—a former student of this University, and a most trustworthy observer—and also to a letter by Mr. E. L. McNair in the *Spokane Review* of June 2.

Both gentlemen were members of a party of engineers engaged upon a survey for the Nelson and Fort Sheppard Railway Company on Beaver Creek, about eleven miles north and five miles east of where the Columbia crosses the international boundary line. About four o'clock on the afternoon of May 26 a series of sharp reports was heard, following one another in quick succession, and apparently occupying in all about half a minute. The first report was quite loud and sharp, and each succeeding one less so, as if coming from a greater distance. Following the reports was a whizzing sound, such as might be supposed to be produced by a body moving rapidly through the air.

At the time of the "explosion" a man named Gerling was walking along the Beaver Creek trail. At first he thought that the noise was thunder, but the whizzing sound puzzled him, and on looking upward to see if he could tell whence it came, it grew louder and louder until a stone struck the ground not far from where he stood. He searched for it, but without success, as the place was thickly overgrown with bushes.

Some distance from this a fragment fell within fifty feet of a man named Edward McLeod. It buried itself in the earth, but was dug out, and found to weigh four or five pounds. On the following day (May 27), in the course of his topographical work, Mr. Hislop came upon a freshly-made hole in the ground into which the loose earth had fallen, and on following it down to a depth of three feet from the surface a portion of the meteorite weighing about twenty-five pounds was discovered. The hole made an angle of  $58^{\circ}$  with the horizontal, and its course showed that the mass had come in a direction S.  $60^{\circ}$  E. (true meridian),

The writer is indebted to Mr. Hislop for a portion of this mass, and a preliminary examination fully establishes its meteoric character.

The fresh fracture is light grey in colour and harsh to the touch, the crust being brown and dull. The chondritic character is distinctly seen without a lens, though the "chondra" are mostly under a millimetre in diameter. Examination of a thin section with the microscope showed the presence of olivine, enstatite, iron, troilite, and chromite (?). The iron is present in the form of little shining grains and strings. On treatment with hydrochloric acid the powder gelatinises readily (olivine) and evolves hydrogen sulphide. By means of an ordinary horse-shoe magnet some of the powder was separated into a magnetic and a non-magnetic portion. The former amounted to about 23.5 per cent. of the whole, and consisted mainly of nickel-iron, which, however, carried with it a portion of the other constituents.

A partial analysis of the magnetic material gave:—

Iron	...	...	...	...	78.72
Nickel (including cobalt)	...	...	...	...	6.87
Insoluble in hydrochloric acid	...	...	...	...	10.04
Soluble silica	...	...	...	...	1.46
Magnesia, &c., by difference	...	...	...	...	2.91

100.00

If all the iron and nickel present be regarded as nickel iron, the percentage of nickel (with cobalt) is 8.73. No doubt, however, a little of the iron was derived from olivine and possibly from troilite.

The writer hopes to publish before long the results of a less hurried and more detailed examination of the specimen in his possession.

B. J. HARRINGTON.

#### SPANGOLITE, A REMARKABLE CORNISH MINERAL.

AMONG the valuable Cornish minerals from the Williams collection which have recently been acquired by the trustees of the British Museum<sup>1</sup> is one specimen which deserves immediate notice, since it proves to be a recently discovered mineral of which only one other example is known to exist, and that from a foreign country.

The mineral belongs to the fine series of copper ores from the St. Day mines, which are chiefly arsenates and phosphates, and among these, while it exceeds the remainder in scientific interest, it is inferior to none in beauty.

The specimen, about the size of a hen's egg, consists of a granular gossany quartz carrying on both sides a little massive cuprite, which is covered and replaced by greenish alteration products—chrysocolla, malachite, liroconite, and clinoclase—together with a little chersylite; especially conspicuous being the bright green crystals of liroconite and indigo-blue groups of clinoclase.

But among these, dispersed upon both sides of the specimen, are numerous brilliant and translucent crystals of a deep emerald-green colour, which at once strike the eye as something unusual. Their form is a hexagonal prism terminated by an acute hexagonal pyramid having the apex truncated by a single bright plane; and one cannot call to mind any other mineral having precisely this habit.

A minute group of crystals was detached and examined by Mr. Prior and myself with the following result:—The mineral belongs to the rhombohedral system, the pyramid angle being  $53^{\circ} 7'$ ; it has a perfect basal cleavage; it is uniaxial, the birefringence being strong and negative; the specific gravity, determined by suspending a fragment in solution of cadmium bromostate (Rohrbach's solution), is 3.07; it is insoluble in water, but readily soluble in acids; and is found to be a hydrated sulphate and chloride of copper and aluminium. This indicates a very remarkable and unusual composition, but the presence of both aluminium and chlorine is quite unmistakable.

In all the above characters the substance is identical with spangolite, a new copper mineral which was described by Mr. S. L. Penfield in 1890 (*American Journal of Science*, 39, p. 370).

The resemblance between the two specimens extends even to the circumstances of their discovery; the original spangolite