

with the skeleton of a prehistoric man, probably of Neolithic age, in a cave at Mentone.¹

There are some interesting notes by Dr. Robert Brown, F.L.S., F.R.G.S. (1868), and Mr. Alexander C. Anderson (Vancouver Island) on shells used by prehistoric people and modern North American Indians as ornaments (see *Reliquia Aquitanicæ*, by E. Lartet and H. Christy, edited by T. Rupert Jones, 1865–75, p. 296). In the same work also at p. 70 a shell-necklace from Cro-Magnon Cave is figured on B, pl. xi, composed of *Littorina littorea*, *Purpura lapillus*, *Turritella communis*, etc.

In the Cavern of Bruniquel explored by the Vicomte de Lastic in the Valley of the Aveyron *fossil shells* were found *perforated*, which had evidently been used as personal ornaments (see op. cit., p. 70); the collection is now preserved in the British Museum.

H. W.

SEA-WATER AND CRITICAL TEMPERATURES.

SIR,—How very true the parable of the moat and the beam is, and what a good example thereof is afforded by the letter of Mr. A. R. Hunt in your last number! He accuses his fellow-workers in geology, after a disquisition on the knowledge of foreign languages, of neglecting the researches of Daubr e and other workers abroad. Yet, although he has written on the subject of sea-water in volcanic and metamorphic action, he has apparently never read some dozen or more papers of mine on that subject, written years before (1892–4), though his own countryman.

I have distinctly shown that the critical point of water has nothing whatever to do with the question, and that we have to consider the physical conditions of the gas H_2O *in solution*, under varying pressure in fused silicates and oxides. I have urged the alkalization of magmas by the assimilation of the alkaline salts in sea and other water, and accompanied by the liberation of the acid radicles in the form of the enormous emanations at volcanic vents. Furthermore, as mineralizers and fluxes, I have mentioned over and over again saline substances as being great agents in metamorphism. I laid down the fundamental principles of eruptive activity, which have never been controverted or controvertible because they are demonstrated and illustrated in all volcanic regions, principally by the nature and characters of the fragmentary ejecta of volcanoes.

Strangely enough, geologists and petrographers steadily and uniformly ignore the invaluable lessons taught by a study of fragmentary ejecta, while they cover thousands of pages with hypothetical, chemical groupings of massive rocks, ornamented by the most astoundingly complicated nomenclature, which, in the end, adds naught to our knowledge. Almost equally uselessly, they make elaborate calculations of percentages of different hypothetical feldspars, and are blind to other structures that really record the vicissitudes between the primitive, purely vitreous paste and the consolidated rock.

¹ See *Comptes Rendus*, No. 26, p. 1597, June, 1872; also *GEOL. MAG.*, Vol. IX, pp. 272–4, 1872 (with a figure); also op. cit., p. 368, and article by Professor John Morris, *Pop. Sci. Review*, July, 1872.

If Mr. A. R. Hunt will read my papers, he will find that a very full use is made of the experimental geology of foreign workers, where they explain the genesis of minerals or rock structure in igneous and metamorphic rocks.

I rather fear that the experiment of the piece of granite, suggested by Mr. Hunt, is not a fair reproduction of natural conditions. We must not expect the packing of any rock at great depths to allow fissures. The flow of solids under such conditions of high pressure and high temperature will reduce *all rock substances* to some advanced degree of viscosity, and allow the 'écoulement des solides', which, even in superficial rocks such as are found in mines, is known as 'creep'. The transmission of water to igneous foci is really a process of hydration and solution (and not percolation), too long to discuss in this letter.

I shall be pleased to supply Mr. Hunt with a list of my papers to which he may refer.

H. J. JOHNSTON-LAVIS.

BEAULIEU-SUR-MER.

February 12, 1913.

MISCELLANEOUS.

ANTARCTIC EXPEDITION.

In Memoriam.

It is with deep regret that we briefly record the deaths from exposure and starvation, after accomplishing their mission to reach the South Pole, of the heroic five, Captain Robert Falcon Scott, Captain L. E. G. Oates, Dr. E. A. Wilson, Lieut. H. R. Bowers, and Petty Officer Edgar Evans. They had arrived within eleven miles of their stores, but a blizzard which lasted nine days and nights overwhelmed them. It is but poor comfort to know that the relief party found and buried the unfortunate explorers and recovered all their records and geological specimens.

CROYDON'S 'WOE WATERS'.—Croydon's mysterious 'woe waters', the Bourne flow, made its appearance yesterday in Caterham Valley. In a few weeks the tiny stream on Welford's Farm, Whyteleafe, will have become a rushing brook, overflowing its banks for miles down the valley to Purley. Originally each visitation was regarded as foretelling war, plague, or famine. Mr. Baldwin Latham, M. Inst. C. E., who has studied each flow since 1866, attributes it to the uprising of the ground-water (plane of saturation) in the Chalk, after periods of much rain. He fixed the flow this year for February 3.—In part from the *Daily Telegraph*, February 1, 1913.

ERRATUM.—In a review of a memoir on "The Sedimentary Deposition of Oil", by Dr. Murray Stuart, F.G.S., Professor of Geology in Presidency College, Madras, the author's name was by an oversight printed "Stewart" (see *GEOL. MAG.*, December, 1912, pp. 570-1, and in the Index, p. 583). Please correct to "STUART". The Editor expresses his deep regret.