

GOLD IN THE COAL-MEASURES OF NEW SOUTH WALES.

SIR,—The following important facts, abstracted from a report by my friend Mr. C. S. Wilkinson, F.G.S., Government Geologist of New South Wales, to the Minister of Mines of that Colony, on the occurrence of payable gold in the New South Wales Coal-measures, may be of interest to your readers. Mr. Wilkinson observed that the gold found in the alluvial deposits of Tertiary age at the Old Tallawang and Clough's Gully diggings was derived from conglomerates of Coal-measure age, associated with sandstone and shale containing the very characteristic genus of fossil plants, *Glossopteris*. At Clough's Gully the conglomerate *in situ* is worked for gold, and has yielded nuggets weighing as much as five ounces. This is the first time that payable gold has been noticed to occur in the New South Wales Coal-measures, although it is to that veteran in Australian geology, the Rev. W. B. Clarke, F.R.S., and the late Sir T. L. Mitchell, Surveyor General of New South Wales, that we are indebted for the first announcement of the fact that gold was to be found in rocks of the age in question.¹ Mr. Wilkinson also states that a collection of fossil fruits obtained from the "Black Lead," Gulgong, under a stratum of Basalt, and at a depth of 163 feet from the surface, has yielded to the researches of the Baron F. von Müller, M.D., F.R.S., etc., seven genera and nine species of new forms. The report concludes with a reference to another important, and at present, unique discovery by Mr. Wilkinson, that of a species of *Unio* in one of the Gulgong "deep leads," "the first fossil shell of the kind yet discovered in the Pliocene Tertiary gold drifts."²

EDINBURGH, March 28, 1877.

R. ETHERIDGE, JUN.

NATURAL OR ARTIFICIAL? PITS OF THE HAUTE MARNE.

SIR,—At p. 210 of *Le Bassin de Paris*, by M. E. Belgrand, a letter from M. Royer is inserted giving the following account of some singular excavations in the Portland Plateaux, Haute Marne.

"On the high hills of the town of Poissons near Joinville, the culminating point of which reaches the height of 200 mètres above the river Rongeant, these cavities, from their depth and extent, acquire unusual importance; certain of these hills are literally riddled with pits (puits) ramifying in all directions, sometimes having a subterranean communication one with another and reaching unascertained depths, sometimes exceeding 30 or 40 mètres. The general character of these pits and the polish of their rocky walls suggest that an acid contained in the waters by which they were eroded, may have contributed to their excavation; but their extent and number suggest some more powerful agent; and what more powerful cause could you invoke than a great quantity of water, acting through a long period, falling into the fissures of the Portland rock, enlarging them, fashioning them, and giving them the capricious forms which we find everywhere in rocks subjected

¹ Clarke's Southern Goldfields, New South Wales, 1860, pp. 44 and 244.

² *Sydney Evening News*, No. 2940, November 30th; and *Sydney Morning Herald*, December 2nd, 1876.

to their action? . . . Now among the debris which have filled these cavities . . . bones of the great mammalia of the Quaternary period have been found." (Elephant.)

There is a difference of opinion as to the date of the excavation: M. Royer contending that it was before, and M. Belgrand that it was after, the excavation of the valleys; but both agree in attributing these pits to the action of a vast quantity of water, whether produced by a diluvial cataclysm, or else by the incessant rains of the Pluvial period in which they both believe. The description immediately suggested to me a strong resemblance to "Grimes Graves," near Brandon, an account of which will be found in the Journal of the Ethnological Society of London, New Series, vol. ii. p. 419, in an article on the opening of Grimes Graves, in Norfolk, by the Rev. William Greenwell, M.A., F.S.A.

Beyond all question Grimes Graves were excavated by the manufacturers of flint implements; and they were sunk to a depth of 30 or 40 feet in order to reach a layer of flint especially suited to their purpose. There are some circumstances mentioned by M. Royer in which his pits agree with these: their great number, the subterranean communication one with another, and lastly the form, so far as it is suggested by the French words '*puit*' and '*gouffre*,' both applied to these pits. M. Royer speaks of "capricious forms," which seems to betray the fact, that he is puzzled to know how those vast waters could have done it so regularly (?). The depth of "some of them," 30 to 40 mètres, is indeed somewhat staggering, being three times the depth of the Brandon pits, and the rock is not Chalk, but corresponds in age to our Portland. M. Contejean, in his "Éléments de Géologie et de Paléontologie," p. 620, describes the "terrain jurassique" as consisting in thick argillaceous and calcareous beds (massifs), often irregularly alternating, and as including, at various levels, ferruginous layers, and layers of *flint nodules*. And at p. 426 he says, siliceous nodules (rognons) exist in all sedimentary deposits, but especially in the Jura limestone and in chalk. What is the precise nature of the Upper Oolite in Burgundy and Champagne my library does not give me the means of knowing. Burat only remarks that it does not present such marked forms (due to the outcrop of limestone) as the middle and lower Oolite; the argillaceous part (assise) at the base is but little developed; the greyish or yellowish-grey calcareous beds (calcaires) of the upper part (assise), which are found at first in isolated outliers, on the summits of the middle stage (étage moyen), end by forming, at the foot of those summits, an undulating surface of hills with more or less gentle slopes, with altitudes of not more than 150 and 200 mètres, the inclines and escarpments of which are less conspicuous. Among localities where the beds may be studied, he mentions Bar-le-duc, Bar-sur-Seine, and Auxerre; and says that in the Portland beds the limestone is too much divided to be quarried, and forms stony plateaux (p. 440). It does not appear from these authorities that any insuperable impediment exists to such pits having been sunk by man; and the suggestion is countenanced by

the fact, that although in the comparatively narrow and steep valleys traversing this formation, there is but little gravel, and no implements have been found, yet on the uplands numerous and well-made flint implements have been collected, from what M. Belgrand calls the *hunting stations*.

It may seem strange that if these pits really do present the similarity to Grimes Graves which I have supposed, the idea should not have occurred to the French geologists; they may never have heard of our pits; but I find it stated that in the *Memoires de la Société des Sciences, etc., du Hainaut, Année 1866-7*, published at Mons, 1868, there is a paper, relating to similar ancient works, by MM. Briart, Cornet and De la Haie (*Rapport sur les Découvertes géologiques, etc., faites à Spiennes en 1867*), and that those works were known as long ago as 1842. I have not seen this article, and can find no account of it in my books.

If attention has not previously been called to the primâ facie possibility that these pits in Champagne are the work of manufacturers of flint implements, perhaps you will consider the matter of sufficient importance to give it a place in your MAGAZINE. The description is too loose and general to be a ground for anything more than suggestion and inquiry.

HENRY NORTON.

21, UNTHANKS ROAD, NORWICH, *April 20th, 1877.*

A NEW SUBMARINE VOLCANO? IN THE MEDITERRANEAN.—An exciting story is going the round of the London journals, calling attention to “a singular accident which lately befell the steamship Knight Templar, 1,550 tons gross register, from Cardiff to Bombay with coal. When off the island of Galita, near the Gulf of Tunis, and, according to the Admiralty Chart, being in a thousand fathoms of water, she suddenly received a violent shock, and was immediately surrounded by a seething mass of foam. Being run ashore, and ultimately examined, it was found that at a distance of 15 feet from the stem of the vessel some 10 feet of her keel had been torn out in a peculiar manner, while the after part of the ship’s bottom had also been seriously injured. Altogether the character of the damage done to the ship leads the writer, a Board of Trade surveyor, to the conclusion that the ship’s hull had been struck by a submarine volcanic eruption, a theory much strengthened by the well-known character of the locality.”

Scrope long since pointed out that the volcanic line of disturbance extends from Calabria and Sicily in a south-westerly direction towards the African coast, and embraces the volcanic island of Pantellaria, and the sunken volcanic island of Ferdinanda, to Cape Bon, the eastern promontory of the Bay of Tunis, linking Sicily with Africa; and that the intervening tract *is known to be very shallow* (“*Volcanos*,” p. 345).

Is it not possible that a *sunken rock* was the cause of the “*Good Templar’s*” *scrape*? Anyhow he had a narrow escape, whether struck by a *volcanic bomb under water*, or scraped on a part of the old ridge dividing the Eastern and Western basins of the Mediterranean. We hope the Admiralty will investigate this matter thoroughly.