"some men camped twenty miles west from here inquired if we had heard the rumble last night: it appears their Afghans jumped up and said 'buggy coming.' Whatever the sound was, it was not caused by cattle galloping."

The sound resembled a distant, prolonged peal of thunder or the discharge of a far-away piece of ordnance or mine explosion. The nearest working mines would be about sixty miles away, the sea about fifty miles, and it is needless to say there is no artillery within hundreds of miles. No noticeable meteor was seen by anyone, and had the noise been due to this, would it have been heard at places twenty miles apart? It might have been due to an earthquake, but no tremor was noticed.

I have heard from ear-witnesses of dull sounds resembling this being heard in the Kimberley district of this State. At the time, a black-fellow said, "Hill tumble down," and next day they found that great masses of rock had fallen. This might, perhaps, be accounted for in part by the unequal temperatures between day and night—the day very hot, the night very cool. Though the days in August were hot (about 90° F. in the shade) and the nights very cool (requiring several blankets in the early morning), the nearest hill to us was four miles at least away to the east.

Was this, then, an instance of the phenomenon known as "barisàl guns" on the Brahmaputra and "mist pouffers" off Belgium?

Mr. W. E. Cooke, the Government astronomer, to whom I forwarded an account of the phenomenon with the above inquiry, advised me to record it according to the wish of Sir George Darwin. J. BURTON CLELAND.

Department of Public Health, Perth,
W. Australia, April 16.

Welsh Saints and Astronomy.

THERE were in Anglesey two contemporary saints who were in the habit of meeting together at a spot mid-way between their respective abodes. One was called Seiriol Wyn, "Seiriol the White or Bright," the epithet signifying his coming from the east, the region of sunrise. He had his abode on Puffin Island, on the extreme east of Anglesey. The other saint was called Cybi, and because he travelled to meet his friend from the west he was called Cybi Velyn, "Cybi the Yellow." He lived on Holy Island, at Caer Gybi, "Cybi's Camp," the Welsh name of Holyhead. Their place of meeting was in the parish of Llandyvrydog, where there are two springs called Ffynnon Cybi and Ffynnon Seiriol, which are referred to by Matthew Arnold.

"In the bare midst of Anglesey they show
Two springs which close by one another play,
And 'thirteen hundred years agone,' they say,
'Two saints met often where these waters flow.'"

Cybi, known in Cornish literature as Kebie, seems to have reached Wales from Cornwall. His wanderings and settlements are curiously coincident with the distribution of the cromlech areas in Wales. On further inquiry one finds that Cybi and Seiriol were regarded as astronomers, and that their places or settlements in Wales may be regarded as observatories.

In an ancient poem, to an extract from which I find the reference "Archaiol. vol. ii. p. 38," they are numbered among the "seven cousin saints," the others being Dewi, Beuno, Dingat, Cynvarch, and Deiniol. "Those are the seven . . . who have been in (or who entered) the Stone (of round form? 'graen grynder'), and the seven who numbered the stars." The expression "a fu'n y Maen," "who have been in the Stone," must be taken in the sense that they had entered a stone chamber or circle, and it is hard to find any meaning to the phrase unless a cromlech or stone circle is meant, especially when read in connection with numbering the stars. Thus it may fairly be taken that the leading saint-astronomers of Wales are spoken of as having made an astronomical use of stone monuments. This inference is confirmed by the fact that the Cybi churches in Wales, and most likely churches associated with the names of the other six saint-astronomers, preserve in their relation to adjoining churches the cromlech astronomy, especially the May-November year. JOHN GRIFFITH.

Meteors from κ Draconis in May.

ON May 31, 10h. 40m., I saw amid the gathering clouds nearly overhead a very short third-magnitude meteor close to its radiant at 193°+74°. I had never previously remarked any indication of this shower at the end of May or in June, though it seems continued in an intermittent manner from July to December, and on January 19, 1887, I recorded four meteors from 191°+72°. There is another winter shower near, viz., at 194°+67°, from which I saw seventeen meteors on December 18–28, 1886.

A bright, doubly observed meteor seen in 1893 by Corder and myself had a radiant at 186°+74°. This shower is one of the most interesting of those in the circumpolar region. It is, unfortunately, omitted in the diagram of Ursid radiants facing p. 292 in the Gen. Cat. Radiants, vol. liii. of the Memoirs.

The straggling constellation Draco contains many showers, and some of these are visible over long periods. Thus meteors continue to fall from a centre at about 261°+63° during the whole year.

Bristol, June 1. W. F. DENNING.

FORMATION OF GROUND- OR ANCHOR-ICE, AND OTHER NATURAL ICE.

THE formation of ice on the bottom of a river or stream has occasioned much comment and often scepticism in the minds of scientific men. Instead of ice forming on the surface of the water and growing downwards, we find, in circumstances now well understood, ice forming on the bottom and growing upwards. The phenomenon has been observed in all countries where ice is formed, and has been given various names. In Europe it is called ground-ice or bottom-ice (glace-du-fond, grund-eis), but we often find local names, such as ground-gru and lappered-ice. The term anchor-ice evidently originated in America, for the first record of its use seems to be by a writer in the "Encyclopædia Americana," published in 1831. The term is universally used in the United States and in Canada.

There are many early records of the appearance of ground-ice. It was seen by Hales in 1730 in the Thames. Ireland, in his "Picturesque Views" of the Thames, published in 1792, speaks of ground-ice, remarking, "the watermen frequently meet the ice meers or cakes of ice in their rise, and sometimes in the underside enclosing stones and gravel brought up by them ad imo." It was observed in the Elbe as early as 1788, in the Rhine at Strassburg in 1829, and in the Seine, by Arago, in 1830. So much interested was Arago in the ice that, for the benefit of the doubting savants of his time, he published in France, and in the *Edinburgh New Philosophical Journal* for 1833, an account of his observations. Other interesting papers on the same topic were published about that time. In the same Edinburgh journal we find, in 1834, a paper by the Rev. Mr. Eisdale. Two very interesting and instructive papers were published in the Phil. Trans. for 1835 and 1841 by the Rev. James Farquharson, F.R.S., of Alford, of his observations on the Don and the Leochal.

In Canada the formation of anchor-ice has been given much study, largely owing to its great abundance and economic aspect. For the same reason, much attention has been devoted to it in Russia by prominent engineers, notably by M. Leon Wladimirof in his study of the ice conditions in the Neva.

Nowhere can be witnessed a more wonderful sight of the delicate poising of the forces of nature than in a river like the St. Lawrence, with the advent of the winter season. In November, when the temperature of the water arrives at or near the freezing point, the manufacture of ice begins, and for a period of nearly