as the pioneer worker in the bacteriological method for the examination of drinking-water involving the use of solid culture material, viz. gelatine. FRANK SCUDDER.

Ellerslie, Alderley Edge, June 5.

### A Prognostic of Thunder.

As the thunderstorm season has now set in, may I call the attention of weather observers to what seems to me an almost infallible prognostic of thunder, which was described in a letter in NATURE of July 5, 1888.

It consists in the formation of a small group of *parallel streaks* of cloud, seldom more than three or four in number, definite in form, and limited in extent and duration, appearing either as white streaks on the blue, or more rarely as darker streaks against nimbus or cumulo-nimbus.

I have very rarely seen these "parallel bars," as I have come to call them, without their being followed by thunder within twenty-four hours.

As the value of the prognostic seems to depend on the definiteness, small magnitude, and short duration of the "bars" (since one may sometimes see a large portion of the sky covered with rippling clouds which are followed only by rain without thunder, or not even by rain), their connection with thunderstorms seems to be explicable by the view that they are "interfret clouds" of very limited extent, indicating the superposition of atmospheric strata of very unequal temperature or humidity, with a *restlessness* which shows itself in local and temporary irruptions from one stratum into the other; an irregular condition very likely to be associated with electrical disturbance.

I may add that these "bars" are very readily detected after being once seen, and very easily noted; and they deserve, I think, more attention from meteorologists than they have received. B. WOODD-SMITH.

Hampstead Heath, N.W., June 10.

### Tufted Hair.

I HAVE had, within the past few days, my first opportunity of examining closely the living head and hair of the African Negro, on several "Kru boys" from the West Coast. Their hair, which was cut moderately short, presented the usual appearance of a congeries of tufts arranged in a more or less linear manner, but when closely investigated it was found to be uniformly distributed over the scalp—each cork-screw tuft, resulting from the separate hairs on amall adjacent areas, intertwisting together and forming a silky compressed curl. In New Guinea I investigated the manner of growth of the hair on a large number of natives from widely distant regions, on many of whom the body was also covered with, to all appearance, little distinct spirals. On close scrutiny, and with a little trouble, these "cork-screws," both on head and body, could be perfectly uncurled and separated out into individual hairs growing from roots as nearly as possible equidistant from a central hair, round which the others coiled themselves, each hair being in fact a twining-plant-like structure, laying hold of a neighbouring hair as a supporting stake. Both on body and head the hair follicles were evenly distributed. These facts, as regards the African, are already quite well known from the investigations of Prof. Virchow and others; but it may not be without interest if I record, after this opportunity of comparing the Melanesian with the Negro, that the growth of their hair in both races is identical.

The Museums, Liverpool, June 14. HENRY O. FORBES.

## *LORD KELVIN.*

AS these words are being printed, the Jubilee of Lord Kelvin's professorship is being celebrated in the most enthusiastic and magnificent manner at Glasgow. Delegates from all parts of the world are present, and among them are many of the most eminent representatives of science at home and abroad. From Paris to Moscow, Canada to Mexico, India to Australia, the whole civilised world unites in congratulating Lord Kelvin on the great work for science and the good of his fellow men which he has achieved, and in offering good wishes that he may have health and strength for the continuance of his glorious career. Though for fifty years he has been Professor of Natural Philosophy at Glasgow, has seen pass through his classes several generations of students, has been one of the greatest leaders in what has been pre-eminently a century of scientific discovery and advancement, has worked as few men can work, and withal has taken the keenest interest in all that ought to interest the true citizen of a great country, yet is his eye not dim, nor his natural force abated. It is the hope of all his friends, and of all the great army of scientific workers, who now are unanimous in doing him honour, that he may have before him many long years of happy and successful work.

Lord Kelvin, though born in Ireland in 1824, began his connection with Scotland and with the University of Glasgow at a very early age. His father, Professor James Thomson, still remembered by many alumni of Glasgow as a remarkably skilled and successful teacher, was appointed to the chair of Mathematics in 1832, so that when only eight years of age, William Thomson began his residence at the University of Glasgow. Only two or three years later he began to attend University classes, and soon attracted attention by a brilliance of intellect very remarkable in one so young. His proficiency in mathematics and natural philosophy was very great, but other studies were by no means neglected, and, under the careful supervision of his father, he received a thoroughly all-round and complete education. It may be mentioned here, that of the importance of giving its due place to science in any good scheme of liberal education, no one could be more convinced than Lord Kelvin, but that no one values more highly than he does the Old Humanities, and the importance of a sound logical and linguistic training.

While he was yet a boy, his interest was keenly excited by such subjects as the Figure of the Earth and Fourier's Theory of the Flow of Heat. On the first he wrote a University prize essay, and, on the latter, a series of papers in which he successfully defended Fourier's researches from a charge of unsoundness which had been brought against them, through some strange misconception, by a very competent writer who had graduated a few years before with the utmost mathematical distinction. It is worth relating, as indicating the promise and power of the youthful natural philosoper, that when only fourteen or fifteen years of age he read Fourier's great treatise through in the intervals of travelling about, during a fortnight's visit to Germany. That he did so to some purpose is shown by the papers in defence, explanation, and extension of Fourier's results, which soon after flowed from his pen.

There can be no question that, like many other eminent physical mathematicians, Lord Kelvin has been inspired and directed by his early study of Fourier and the other great French mathematical writers of the end of the eighteenth and the beginning of the present century. But he has always fully and gratefully acknowledged the helpful and interest-exciting influence of some of his old teachers at the University of Glasgow. To mention only one, Dr. J. P. Nichol, formerly Professor of Astronomy in the University, the compiler and, to a great extent, the author of Nichol's "Cyclopædia of Physical Science," and a most delightful lecturer on astronomical and physical subjects.

The tale of Lord Kelvin's achievements at Cambridge has been often told—how he won the first Smith's Prize and the Colquhoun Sculls, and was known as one of the most promising original mathematicians of the time. He returned to the University of Glasgow as Professor of Natural Philosophy in 1846, and from that day to this the history of his life-work has been in no small measure the history of the progress of physical science. There is no department of physical science which he has not enriched and extended by his discoveries. There is hardly any theory in dynamics, heat,