

the geology, but of the physical geography of India, in connection with a map of its hill ranges, that has nothing geological about it. It is in this expressly geographical part of the manual that I find the greatest range of snowy peaks in the world omitted from a geographical notice and delineation of the Himalaya. I did not allude at all to geology.

Mr. Medlicott contends that the omission was due to the irrelevancy of the great range to the matter in hand. But how can a great range of the Himalaya be irrelevant to a geographical description of that mass, or to a special map of the hill ranges of India? And why should a prominent and leading feature be treated as a mere incident? In fact the omission was plainly due to the survival of an old error or "antiquated theory," which confused the snowy peaks seen from the Indian plains for the most part with the water-parting of the Sanpu and Ganges basins, although the latter really forms a distinct but parallel range further to the north. In these days a clear understanding of the superficial or geographical aspects of the mountains on the frontier of India cannot be overrated. The statesman, the warrior, and the trader alike stand in need of it; and misleading or confused representations of the subject may become of serious moment. The ignored range is indeed to a great extent the limit of the Tibetan Plateau and of the Chinese Empire, the relations of which with India are rapidly rising into importance.

Mr. Medlicott's appeal to "the great gneissic axis" is not less unfortunate than the argument which he derives from "irrelevancy." If "the great gneissic axis" divides on the west of the Sutlej, it may be presumed to be intact on the east of that river, where in consequence it would be the more entitled to delineation and notice. But the only parts of the Southern Himalaya inserted in Mr. Medlicott's map of the Hill Ranges, are the Pir Panjal and Dhauladhar, on the west of the Sutlej. Is there any ground for identifying "the great gneissic axis" with the Northern Himalaya, which alone is delineated east of the Sutlej, in preference to the Southern Himalaya which is omitted? It is enough to say that neither of those ranges has been sufficiently explored, to admit of a general conclusion on the subject. Therefore it is fair to add that even geologists must refrain for the present from accepting Mr. Medlicott's dictum in that respect.

Mr. Medlicott's penultimate sentence baffles my best efforts to understand it. It seems to be meant to be applicable somehow to the region between the Indus and Sutlej.

In conclusion I can find no good ground for treating the views of geographers and geologists as wide apart, merely because a great geographical fact has been neglected in an important geological work; and I hope that the omission will be rectified in future editions.

TRELAWNY SAUNDERS

On Halley's Mount

PERMIT me to mention two suggestions which have been made with reference to the article "On Halley's Mount" in *NATURE*, vol. xxi. p. 303, viz.:—

1. That some mention should have been made therein relative to Dr. Halley's official investigations (*vide Phil. Trans.*, vol. xvii. p. 960, 1693).

2. That it was *not* at Dr. Halley's private expense¹ that the "Principia" was published, although it was in consequence of his urgent persuasion that Newton produced his great work (*cf.* Preface to the "Principia").

It may be remarked that there is a biographical sketch of Edmund Halley in Mr. Crookes's *Monthly Journal of Science* for February, and that the Astronomer-Royal has signified his hearty approval of the idea of the proposed monument in St. Helena.

THE WRITER OF THE ARTICLE "ON HALLEY'S MOUNT"
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"A Speculation Regarding the Senses"

IN a letter bearing this title (*NATURE*, vol. xxi. p. 323) your correspondent, "M.," while indulging in a most extraordinary "speculation," observes that it is "not without some encouragement in actual fact." He then adds: "The ascertained facts of clairvoyance and mesmerism are what I have more especially in view," &c. Now, whatever may be the case with clairvoyants, I think, to quote from "M.," that it must certainly "require some peculiar state of mental calm" to enable a man, when writing in a journal professedly scientific, thus quietly to assume

¹As inferred from Whewell's "History of Inductive Sciences."

the truth of all the astounding class of phenomena to which he alludes as "ascertained facts." Clairvoyants, spiritualists, *et hoc genus omne*, often complain that scientific men are arrogant in their treatment of, or allusions to, the alleged marvels of the modern *science*; and if we have regard to the jaunty manner in which Dr. Carpenter rides his favourite hobby along "the high priori road," I do not deny that the spiritualists have sufficiently good ground for complaint. But let them not meet arrogance with arrogance, or speak about facts which, at the best, are highly doubtful as facts which have been "ascertained."

My object, however, in writing this letter is not controversial. I desire merely to represent to "M.," and any other of your readers who may believe in the alleged phenomena of clairvoyance, that it is their duty to have these "facts" properly sifted, examined, and published. I have myself taken a good deal of trouble to investigate the subject, and, while meeting with a vast amount of humbug, have also met with one or two things that I am unable satisfactorily to explain. I therefore desire to prosecute my researches in this direction, without either bias or prejudice, should I be able to meet with suitable material. If "M." and his friends are right, and if I should satisfy myself that they are so, I should give a wide publicity to my methods and my results. If the phenomena should admit of repetition, I should have them witnessed and attested to by a selected number of the leading scientific men of the day. It would then be time for "M." to speak about such "facts" as "ascertained."

Here, then, is a fair offer by "a man of science" to investigate any or all of "the powers of darkness" without any feelings of animosity against them. Will any clairvoyant or spiritualist who really believes in his own belief supply me with an opportunity of so doing? Any letters addressed to the care of the Editor of *NATURE* will be forwarded to me.

F.R.S.

Perforated Stones in River Beds

TRAVELLING some months ago among the Cumberland lakes, I was walking with a friend in advance of our conveyance through a narrow road, when my attention was suddenly arrested by the presence of some interesting shells and stones on the window-sill of a peasant's cottage. Stopping to admire them, or rather having taken some of them up in my hand, the woman of the house—an intelligent person—came out, whereupon I apologised for my seeming rudeness, and asked where she got them. She at once accepted my apology, and added that they, pointing to the shells and stones, were often looked at by other travellers. She further added that they were common enough in the Derwent River hard by, and she made no difficulty at all about accepting sixpence for the two of them I selected.

Now as I have travelled a good deal in the public service and otherwise, and seen many mountain and other streams in my day, without ever meeting any of these perforated stones, I would like to know if they occur elsewhere, and if so under what circumstances. The Derwent, a comparatively small and gentle stream, flows, as we all know, through the beautiful valley of Borradale into the pretty lake of the same name, near Keswick. I do not know anything of the geology of the district, but there are slate quarries and lead mines in the vicinity, and one of my stones partakes indubitably of the former quality. The other is as clearly a piece of granite, and if water be the sole tunnelling agent in these substances, both well illustrate the truth of the old Latin phrase, "Gutta cavat lapidem, non vi, sed sæpe cadendo."

Another thing that struck me in connection with them was the extraordinary likeness of one of them, at least, to the stone axes or hatchets (I forget just now the technical name) figured by Sir John Lubbock in his "Prehistoric Times." This was so striking and obvious that, holding up the specimen, I said to my friend—a gentleman connected with the Press—"Surely Lubbock must have made a mistake, and taken one of these for a prehistoric implement." Further observation only tends to confirm this first impression, and I shall be glad to hear if any similar doubt has occurred to others on sight of these objects. I will also be anxious to hear if they are as common in the Derwent or other rivers as this woman's language would imply, and I will otherwise feel obliged for such information respecting them as the courtesy or curiosity of your readers may enable them to supply.

Warrington

WM. CURRAN

Politics and Science

THE Duke of Somerset, after "considering all the oppressions that are done under the sun," writes about them all,

whether limited monarchy, aristocracy, or democracy, in much the same dissatisfied and despairing tone in which the Preacher of old did. But he concludes his book with drawing comfort from a source which his predecessor of old pronounced impossible. He says:—

"There is yet one branch of human progress which we may contemplate with unmixt satisfaction, and that is, the progress of science, both in its discoveries and its adaptations to the convenience and civilisation of mankind. It may be hoped that the acquisitions of science may become an enduring benefit to the world, not to be again obliterated and lost amid the political convulsions to which society may be subjected.

"To this progress the scientific men of every country may contribute, whether they live under a despotism or under a constitutional government. The pursuit of truth for its own sake is the noblest occupation of the human mind, and from this pursuit it seems probable that mankind will reap the richest reward."

A fairer comment from a more qualified and disinterested writer was never made upon the motto of this journal—

"To the solid ground
Of Nature trusts the mind which builds for aye."

W. O.

Scientific Jokes

You can hardly expect *all* your readers to see through the jokes at p. 337 of your last number. I instance only two out of many.

"The energy of heat is made up of heat and temperature"! This may set some earnest but ignorant students to find *how* Joule's Equivalent depends on temperature: and it would be well to warn them.

"Profs. Ayrton and Perry have developed a theory of terrestrial magnetism . . . which coincides well with facts." Here the reader should have been told that Rowland has proved that, according to this theory, the moon would have been repelled into the profundity of space, and the greater part of the earth's surface, including its atmosphere, torn off by the enormous electric forces involved.

G. H.

Stags' Horns

CONCERNING the disappearance of cast horns, the theory that stags retire to secluded spots, about the time for shedding their horns, mentioned by B. W. Barton in NATURE, vol. xxi. p. 325, may be perfectly correct where the animals have woods to go to, but this opinion cannot hold good with the thousands of reindeer that frequent the barren lands of the north-east part of America; yet it is rare to find on these "barrens" the shed horn of either buck or doe, although the latter drop their horns in May or June, when at or on their way to their far north summer quarters.

As far as I have observed, the new horns of the male reindeer (in the wild state) do not begin to grow until weeks after the old ones have dropped off, and there is no danger of one stag "disturbing" another, when *all* have their horns in the tender velvety stage; in fact, no animals can be less pugnacious than these fine creatures are during eight months of the year.

2, Addison Gardens, South Kensington, Feb. 7 J. RAE

Apropos of the question of stags' horns, I have just come upon the following in Miss Bird's "Life in the Rocky Mountains."

Describing the so-called "Parks" of the Rocky Mountains as "high-lying valleys large and small, at heights varying from 6,000 to 11,000 feet," she says, "Parks innumerable are scattered throughout the mountains. . . . They always lie far within the Foot Hills. . . . Hundreds can only be reached by riding in the bed of a stream, or by scrambling up some narrow cañon till it debouches on the fairy-like stretch above. These parks are the feeding-grounds of innumerable wild animals, and some, like one three miles off, seem chosen for the process of antler-casting, the grass being covered for at least a square mile with the magnificent branching horns of the elk." P. 122. B. W. S.

"Song of the Screw"

PROF. TAIT has inadvertently attributed to the late lamented Prof. Clerk Maxwell (NATURE, vol. xxi. p. 321) an effusion of mine consisting of a synopsis of Dr. Ball's Treatise on Screws, which appeared in NATURE, vol. xiv. p. 30, under the above title.

As a very humble poet, the occurrence of such a mistake has satisfied my highest ambition; and I feel like a second Chatterton.
J. D. EVERETT

The Post Office and the Telephone

PRAY allow me to correct an important misprint which has occurred in the last paragraph of the abstract of my address which you were good enough to insert in your last number. I said that the Post Office did not wish to restrict or in any way to interfere with the use of the telephone; our only object was to prevent the establishment of a particular branch of Post Office telegraph business *without*, not *with*, its licence or consent.

General Post Office, February 9

W. H. PREECE

KARL VON SEEBACH

GEOLOGISTS will learn with universal regret of the death, after a painful illness, of the distinguished Professor of Geology at Göttingen, Karl von Seebach. Although Prof. von Seebach was still a young man at the time of his death, he had already made his mark in science, and his career promised a distinguished future. Von Seebach's earliest studies were devoted to stratigraphical geology and palæontology, and he devoted much time to the preparation of a geological map of the kingdom of Hanover, and to his earnest labours much of the excellence of this map is due. The result of Prof. von Seebach's studies of the stratified rocks of Hanover are embodied in a number of separate memoirs and in his well known treatise "Die Hannoverischer Jura."

During his later years Karl von Seebach's studies were devoted to wider questions, and the investigation of volcanic phenomena occupied his attention. He visited the island of Santorin and wrote an important work on the eruption of 1866. He also published several interesting memoirs on the volcanoes of Central America, a district which he visited in 1865. Geological science has sustained a heavy loss by his early death.

ARTHUR JULES MORIN

THE serious illness of General Morin to which we alluded in our last number, was followed by his death at Paris on Saturday, February 7, in his eighty-fifth year. Arthur Jules Morin was born at Paris, October 17, 1795. He entered at an early age the famous École Polytechnique, but was summoned from his studies during the fatal campaign of 1814 to assist in the defence of Paris, and rendered good service in the brigade of artillery. At the conclusion of peace he devoted four years to practical studies in military engineering at the École d'Application of Metz, and entered the army as lieutenant in a pontoon regiment. His military career was marked by a rapid and regular promotion through the different grades, terminating in his appointment as an Artillery General of Division in 1855.

General Morin's reputation rests however chiefly on his achievements in the peaceful departments of physical research, as well as on unusual executive abilities in the same connection. As an investigator his attention was directed almost entirely to the solution of problems in mechanics. In a remarkable series of memoirs presented to the Academy at Paris, during the years 1833-1835, Morin gave the results of exhaustive experiments on friction, and established the three general laws of this part of mechanics, viz.:—Friction is proportional to the pressure exerted by a body on the supporting surface; depends on the nature and smoothness of the surfaces in contact, but not on their superficies; and is independent of the rapidity of the motion. Equally well-known is his ingenious apparatus for determining the laws of falling bodies, in which a pencil attached to a falling weight, describes a curve on a perpendicular cylinder, rotating alongside the path of the descending body. The parabolic curve obtained by this simple but exact contrivance,