

a fixed amount of heat we have double the work to do in reconvert-
ing this snow into water and vapour. Hence, we must conclude
that the available heat influencing the climate is decreased by
exactly the amount expended in this work, and therefore a con-
tinuance of the greater snowfall must have the effect of lowering
the average temperature of the climate.

On page 17 of your January Number, Mr. Hill argues that owing
to increased radiation being greater in proportion to the increase of
temperature, therefore, that this may be a cause of glaciation. He
apparently ignores the fact that if radiation is increased in greater
proportion by a rise in the temperature, it is decreased in like pro-
portion by a fall, and that therefore the total annual radiation with
a fixed amount of heat received is therefore also a fixed amount.
If this total radiation was not a fixed amount, would it not have the
effect in high latitudes, where there is a great difference in quantity
of heat received between summer and winter, of causing a Glacial
Epoch? And if so, how is it that with this cause of glaciation
the action does not spread towards the equator as it should do if so
caused?

JOS. GREENWOOD.

DURHAM, June 1st, 1880.

“POST-GLACIAL.”

SIR,—Might I ask the anonymous reviewer of my pamphlet
memoir on the Colchester District¹ to state in what esoteric sense he
uses the word Post-Glacial; at what point in the northward reces-
sion of Arctic conditions he draws the chronological line between
the Glacial and Post-Glacial epochs; and why he supposes that
those conditions obtained outside of the Arctic Circle at the time of
formation of the beds I have described as Post-Glacial in the work
in question.

The mammalia and most of the invertebrata are present in the
middle and lower terraces of the Thames Valley, whilst *Unio*
littoralis, three of the *Helices*, and several of the Coleoptera indicate
the climate of more southern latitudes, and *Corbicula fluminalis* is a
sub-tropical species.

Further deposits have been formed under the existing geographical
conditions as valley brickearths and foreshore mud and sand, up-
heaval of the latter to about 30 feet having taken place, with an
equal extent of deepening of the valleys in consequence.

HARLESTON, 13th June, 1880.

W. H. DALTON.

¹ GEOL. MAG. June, 1880, p. 279.

THE CUDGEGONG DIAMOND FIELD.

Mr. Norman Taylor, whose paper, bearing the above title, was
published in the GEOLOGICAL MAGAZINE, 1879, Vol. IX. pp. 399-412,
and pp. 444-458, requests permission to make the subjoined correc-
tions, viz. :—

Page	400,	line	18	from	top,	for	“C. J. Wilkinson,”	read	“C. S. Wilkinson.”
”	401,	”	23	”	bottom,	for	“Wialdra Reedy Creek,”	read	“Wialdra or Reedy Creek.”
”	402,	”	17, 18	”	top,	for	“Hapdash,”	read	“Slapdash.”
”	402,	”	21	”	”	for	“occurs,”	read	“occurring.”
”	402,	”	4	”	bottom,	for	“40 ft. more,”	read	“40 feet or more.”
”	403,	”	13	”	top,	“descending order,”	means	“the order in which they occur in descending the river.”	
”	407,	”	7	”	bottom,	for	“greensand,”	read	“gemsand.”

OBITUARY.

REV. JAMES CLIFTON WARD, F.G.S.

THE announcement of the death of the subject of this notice must have been to most of his many friends a shock wholly unexpected, both on account of the early age at which he passed away, and the very brief illness which preceded his decease.

After a weakly boyhood, he entered the Royal School of Mines as a student in 1861, and gained the Edward Forbes Medal and prize of books in 1864. In the following year he joined the Geological Survey, and was sent down to Yorkshire. He worked there on the Millstone-grit and Lower Coal-measures in the neighbourhoods of Sheffield, Penistone, Huddersfield, Halifax, and Leeds. Though Ward was never of robust appearance, he had obviously increased both in height and breadth since leaving the School of Mines, when seen by the present writer in 1868; so well had the laborious but healthy work of the Survey agreed with him. While in Yorkshire he always preferred Millstone-grit to Coal-measure work, and his paper read before the Geological Society in 1869 marks the scene of his last labours in that county. It is “On Beds of supposed Rothliegende Age near Knaresborough;” and in it he proves the Millstone-grit affinities of the beds in question, known as the Plumpton Grits.

In 1869 he was transferred to Keswick, and the change from a colliery district to a locality not only devoid of coal-pits, but one in which wild Nature puts forth all her charms, was in the highest degree pleasing to him. At Keswick his activity became two-fold. His Survey work and its results are now represented by his Geological Survey Memoir on “The Geology of the Northern Part of the English Lake District” (published in 1876), and by numerous maps and sections. He also contributed many papers to the Geological Society, and to various periodicals, bearing on the structure of the Lake Country. Of these may be mentioned, in the first place, two on its glaciation, entitled: “The Origin of some of the Lake Basins of Cumberland,” Q.J.G.S. 1874; and, “The Glaciation of the Southern Part of the Lake District, etc.,” Q.J.G.S. 1875. In both papers the origin of the lakes is discussed, and (as regards the English Lake Country) the original investigations of the author confirm the views so long held by Professor A. C. Ramsay. These papers are illustrated by sheets of sections of the highest interest and