

of that country. Some of these old sands and gravels have been made to do duty for the "middle sands and gravels," while in other places the so-called "Upper Boulder-clay" is a glacialoid drift, a meteoric drift, or an aqueous drift, in which a few blocks or fragments of stone can be found, still retaining some ice-scratches.

WEXFORD, October 5, 1875.

G. HENRY KINAHAN.

FORMATION OF A MINERALOGICAL SOCIETY.

SIR,—An effort is being made for the establishment of a Mineralogical Society of Great Britain and Ireland. Will you permit me to call the attention of your readers to this fact, and to say that I shall be happy to give information on the subject to any persons who may desire to become members.

The objects of the Society are—

To simplify Mineralogical Nomenclature.

To determine and define doubtful mineral species.

To study the *Paragenesis* of minerals.

To record instances and modes of pseudomorphism with their accompanying phenomena.

To measure, determine, and illustrate forms of crystallization, especially the irregularities and peculiarities of particular planes, or of crystals from particular localities.

To discuss systems of classification, and to establish a natural system.

To collect, record, and digest facts and statistics relating to economic mineralogy.

To promote the exchange of specimens; and, generally,

To advance the Science of mineralogy.

The rules and regulations to be ultimately adopted will be decided upon by the votes of probably the first 100 members.

57, LEMON STREET, TRURO,

September 17th, 1875.

J. H. COLLINS.

ORIGIN OF ESCARPMENTS AND CWMs.

SIR,—Several years ago you kindly published a number of articles by me on Denudation, and likewise the answers they elicited from several well-known geologists. The substance of these articles was afterwards incorporated with my work entitled "Scenery of England and Wales, its Character and Origin," in which, among other subjects, I entered into a detailed consideration of the origin of escarpments and cwms, especially the very typical cwms of North Wales. Since then Mr. Kinahan has written a work on the Surface-geology of Ireland, which to a great extent is a repetition in different words of the kind of arguments I adopted in reference to England and Wales; and Mr. Goodchild in several recent articles in the *GEOL. MAG* has (evidently without being aware of what I had written) not only used many of my arguments against Subaerialism in substance, but, in several cases, coincidentally expressed them in nearly the same words. This will be seen from a comparison of some portions of Mr. Goodchild's articles with the following quotations from my work on England and Wales:—"Carrying away the blocks and fragments, the removal of which must, in a general way, have kept pace with the recession of the cliffs. . . . the power of a moving crust of land-ice several thousand feet thick to excavate cwm-shaped

hollows could only have done so on meeting with an obstruction such as a steep slope which would deflect the current of ice, and make it acquire a gyratory motion which would enable it to scoop out semicircularly backwards, and possibly at the same time downwards. . . . To be a cwm a hollow must be approximately curvilinear. Rain is doing all it can to destroy this curvilinearity. Rain-streamlets in cwms are gullyng their brims and channelling their sides. A continuation of the process would render a cwm a mere confluence of ravines. The chipping action of frost, aided by rain, is tending to reduce the steepness of the encircling cliffs by bevelling off their upper parts, and hiding their bases under screes. Rain in a state of dispersion is possessed of so little power that it cannot keep up a uniform abrasion of the sides of cwms so as to preserve their curvilinearity. . . . If a single stream cannot produce a cwm, several streams cannot combine so as to give rise to a cwm. . . . Springs would be incapable of undermining laterally so as to leave a hollow at all approaching to the breadth of an average cwm, while a spring undermining backwards would leave a ravine, not a cwm. . . . Springs and streams are the effects instead of the cause of cwms. . . . What is the stream now doing in the upper part of its course, for instance under Glaslyn [Snowdon]? Merely rutting a continuous face of rock." The above are only a few quotations selected from many passages to the same effect. I have likewise, in articles in the *GEOL. MAG.*, etc., frequently referred to the evidences furnished by glaciated rock-surfaces in peculiar positions, and by the undisturbed curvilinearity of *eskers*, of the very small influence exerted by rain and freshwater streams since the Glacial period. While, however, agreeing with much that Mr. Goodchild has written, I cannot help differing from him on many points—such, for instance, as the forms he assigns to the traces of sea-action; but I fear I have already trespassed too much on your increasingly valuable space.

D. MACKINTOSH.

"BOTTLEITE."¹

SIR,—It gives me great pleasure to find that Mr. G. H. Kinahan admits that the curious black mineral called "Bottleite," attached to the base of some layers of granite, "seems due to crystalline structure, the substance being deposited from solution." (See his letter *GEOL. MAG.* for September last, p. 426.) As I have long held that Flint is stalactitic, so I feel certain is Bottleite, a siliceous "stalactite" which has dripped, so to speak, out of the granite.

Whatever Bottleite and Flint are, Obsidian and Isopyre must be classed with them.² More information is anxiously looked for by
Yours, etc.

M. B. ALDER.

FERN BANK, HOLYWOOD, Co. DOWN.

Sept. 22nd, 1875.

¹ Mr. Allport, F.G.S., remarks: "'bottleite' and 'trachalite' are synonymous, 'bottleite' being the local name for a vitrioid rock pronounced to be 'trachalite.'"—*EDIT. GEOL. MAG.*

² We venture to suggest that Miss Alder has opened a wide field of inquiry for Mr. Collins's proposed New Mineralogical Society. (See *ante* p. 569.)—*EDIT. GEOL. MAG.*