

III.—*The County Geognosy and Mineralogy of Scotland.*

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PREFACE.

THE chapters of this work purport to be chronicles of the present state of our knowledge of the mineralogy of the northern portion of the kingdom. The geognosy and lithology are treated of to such an extent only as, in the first place, to explain the position of the minerals; and, in the second, to aid future investigators in their explorations.

In these chapters, in order to do full justice to the work of others, the authority for, and the original discoverer of every locality mentioned, will be quoted, wherever known.

The author, having attempted to visit every known mineral locality to the north of the Forth and Clyde, and having succeeded in this attempt with less than half-a-dozen exceptions, is able in most cases to authenticate, or the opposite, as the case may be, the statements of previous observers.

When no remark is made upon the statements of others, the author is to be understood as himself vouching for their accuracy; when the locality was thoroughly well searched, but unsuccessfully, the letters *n.f.* for *not found* are appended; when there seemed to be sufficient ground to believe any previous statement to be erroneous, the letter *d.* for *doubtful* is super-added.

This record is the result of some five-and-twenty summers of persistent exploration, and of many winters of equally persistent analytical research. In the hope that it may serve as a mineralogical guide book, the localities are given with a fulness of description, and precision of detail which aims at leading the collector, if not to the spot itself, at least to within half-a-mile of it.

As there is no school for the study of mineralogy like that of nature, the study of a chronicle of the *natural occurrences* of minerals should be the next best mode of gaining acquaintance with them.

The precise amount of value, as a piece of scientific information, which is conveyed by such statements as that "*andalusite was formerly found in*

the county of Aberdeen," or to amplify, by one step, that "*Babingtonite occurs in white quartz in one of the Shetlands,*" it would be difficult to estimate; as it is to estimate the exact amount of the boon conferred upon mankind by the purchase, at fabulous prices, of loose specimens from too frequently falsified localities;—said specimens being forthwith secreted in locked cases, till the purchase of the next "curiously rare" substance momentarily exposes them to view.

If the tenth part of the money which is thrown away,—the word is used purposely,—upon the rivalrous hoarding up of specimens, were expended in individual exploration of different parts of the country, followed up by judicious and well directed analytical investigation of rocks, and of alteration products, the following results would probably be attained.—

Geologists would no longer characterise mineralogy as being a repulsive study, inasmuch as it was but the "dry bones of a science," destitute even of the lineaments of life. Mineralogists would no longer speak of the false application of the word *science* to that which, founded not on *known* laws, was speculative and theoretical,—propped on the one side by false chemistry, and on the other by unsound physics.

Museums in the country would become more numerous; and the present rivalry of secretiveness would give place to a rivalry in the sending the best, or at least the second best specimens to one or other of the three metropolitan museums,—such being the only sure way of attaining to anything worthy of being called truly national collections.

Probably the most scientific manner of treating of the mineralogy of a county would be to commence with the consideration of the minerals occurring in the oldest rock,—working from that gradually upward.

Inasmuch, however, as such a plan would be difficult of execution from the older rocks occurring in several counties, I shall adopt the simpler one of locality; taking the counties in order of their occurrence from north to south.

The geological guide maps are, for the sake of uniformity, coloured in conformity with the tints adopted in the maps of the geological survey; with the exception of *yellow*, which is used for quartzite, that serving as a guide rock in many localities. An index of the colours and signs, taken for the most part from Professor Geikie's Geological Map of Scotland,* is appended in most cases. Mineral localities are in these maps indicated by a ring O. The maps, it must be observed, are on very different scales.

* To this map the reader is referred for full information as to the signs adopted.

As it is not practicable to collect minerals in Shetland and the Western Islands with either success or comfort, in any other way than by taking a yacht as a travelling habitation, and attacking the rocks by blasting, or the employment of heavy tools, some useful information is conveyed in the maps of insular localities, as regards anchorages and dangerous rocks.

When an anchor is laid down, it is intended to be implied that a craft can safely lie in all circumstances, unless when otherwise stated. The soundings indicate the proper course out of a harbour; the shallowest points on either side of the channel being also laid down. Rocks which require to be given a wide berth are marked with a cross. Where a passage is *practicable*, but should only be made use of under the guidance of a local pilot, it is pointed out by a curved line. Where merely a *grapline* is laid down, it is meant to be implied that there is safety only with the wind in the direction in which the grapline lies; and that if it is purposed to lie there for the night, that should only be done with ample preparedness for an immediate start, on a shift of wind,—an anchor-watch being in such situations imperatively necessary.

ABBREVIATIONS.

A.	ALLAN, ROBERT OF THOMAS.
C.	CUNNINGHAME, R. J. H.
D.	DUDGEON, PATRICK.
F.	FLEMING, The REV. JOHN.
G. & L.	GREG and LETTSOM.
H.	HEDDLE.
Hb.	HIBBERT, SAMUEL.
J.	JAMESON, ROBERT.
Mc C.	MC CULLOCH, JOHN.
N.	NICOL, JAMES.
T.	TRAILL, THOMAS STUART.
Ukn.	UNKNOWN.
Trv. Gui.	TRAVELLERS' GUIDE THROUGH SCOTLAND; the mineralogical notices in which were written by the late John Watson, Esq.