
Remarks on the Geology of South Africa. By GEORGE THOM, D. D. Minister of Tulbagh, Honorary Member of the Bombay Literary Society, and Corresponding Member of the South African Institution.

[*Read at the South African Institution.*]

GENERAL OBSERVATIONS ON ORGANIC REMAINS.

"These physical researches elevate the mind above objects simply material: they inculcate great moral truths."—URE.

SEVERAL writers on this Colony have given little encouragement to suppose, that, it could afford any remarkable facts to enrich our knowledge of geological phenomena; particularly, that monuments of a former world could be found in Organic Remains.* Private persons have, however, made observations on the peculiar appearances of hill and dale which have led to the discovery of fossils of various, numerous, and distinct characters in shells; while some crustaceous deposits are very obscure, which only time and further discovery can fully unravel.

Our inland plains, and undulations beyond the Tulbagh, Worcester, Swellendam, and George high primitive mountain range, chiefly present these on their surfaces, or slightly imbedded in argillaceous schist; while the continuation of the same chain northward from Tulbagh Village, forms the barrier

26th April, 1653. And Despatches to the Directors of the 14th and 15th of April, 1652.

* Professor Lichtenstein, of Berlin, is, I believe, the only writer who observed at a Fountain in the Hantam, impressions on Schist.

of Organic Remains the most ancient, in that direction. The high towering Winterhoek Mountain about 6,100 feet above the level of the Sea, divides the range into two parallel extended arms; between which, runs the West Olifants River in a narrow vale, and near their termination lies the Village of Clan William. In this valley I observed inclosed in large pieces of rock, the same as found a little to the north-east behind Cogmans Kloof, as also the same species of shells. The declivities and bases of Karoo hills, which skirt that great hill studded inland plain, the Karoo, along the base or near the primitive chain before noticed, afford the most numerous and valuable specimens: while some of the rocky, castellated, and wall shaped tops of the same, contain in the body of the rock some few slight appearances of a testaceous substance, denoting that something great in Organic Remains may be found at their bases.

Worcester, Clan William, Swellendam, George, and Beaufort divisions of the Colony, are, from personal observation, (the last district excepted) the most interesting parts which lay open the evidences of an ancient ocean; or of a great aqueous catastrophe which has left in letters of stone the traces of a former world; so that, the persevering observer, with an ordinary share of intelligence, may read and understand.

With regard to the first discovery of Organic Remains within, or beyond the Colony of the Cape, I have examined all the books, both Dutch and English, which I could meet with; and have conversed with most persons able to afford information. Many of the Dutch inhabitants twenty or thirty years ago, observed the remarkable impressions on the stones and in the quarries from which they had erected their dwellings, but they could not account for the cause of their origin. I believe the honor of the discovery of them, and their nature, is due to a Merchant,* formerly of Cape Town, who was at the Keizie Baths, behind Cogmans Kloof, in the year 1804 or 1805. This Gentleman found the shelly strata there to be true Organic Remains; which I afterwards confirmed by several visits to that spot in 1817, 1818, and 1828.

The shells found along our eastern coasts some miles inland in calcareous rock, from Caledon sub district to the termination of the Swellendam and George primitive mountain range, near Plettenberg's Bay, and those rather more inland in Uitenhage and Albany districts, are different in their genera, calcareous appearance, situation and rock in which they are found, to those remains as above described,—I consider them to have become fossils at a subsequent period. The same remark may be applicable to the west coast of the Colony, to those shells said to be found near the sea or even many miles inland on the

* Mr. Enslie, who kindly obliged me with his notes on the strata, shells, &c.

sandy deserts and plains, before the face of the country becomes mountainous, or assumes the appearance of karroo tabular hills.

The first specimen of fossil shells which I received was in the year 1814, a kind of cockle or muscle, with a slit in both valves extending across nearly half through,—different from any now found in a living state. It was given to me as having been found in Cold Bokkeveld. Upwards of twenty specimens I have since gathered near Cedar Mountains. At the same time I met with a siliceous pebble, evidently fossil coral, from the Orange River: in 1816, a trilobite and many entrochi of the encrinite, or stone lily, when travelling through the little Karoo in Swellendam district; and since that period I have met with endless numbers of specimens of shells, trilobites, and encrinites, and some nondescript fossil insects or animals, whose original element would appear to have been water. Some of these are very imperfect: some found loose; others in regular deposited beds, as if the waters had gently subsided; others, as if local waters had thrown the original mud or detritus into confused and mixed lumps, now hard rock, containing all kinds together, perfect and imperfect; while others are found as if rounded by the force of a river, chiefly oval as pebbles: on breaking which, beautiful shells and crustaceous animals are found in the centre. I think many of these appear to have existed at, or near the spots in which they are now found; others must have been carried by some aqueous force, different from any rivers or waters arising from heavy rains now operating on the face of the country from time to time; because, near their periodical beds, along their banks, they are discovered, though sometimes in the courses of the periodical mountain rivulets themselves, but enveloped in hard schist; while on the banks the others are in the soil which is only affected by rains on the surface, and thus here and there arrest the attention of the Geological inquirer.

(To be continued.)

Inquiries respecting certain Changes observed to have taken place in Domestic Animals transported from the old to the new Continent. By M. ROULEN, M. D. Abridged from the more full details contained in the Edinburgh New Philosophical Journal for October, 1829, p. 326, &c.

DR. ROULEN, after a residence of six years in Columbia, states, that of the large quadrupeds which at present occur in that country, the most numerous are those which have been transported from the old continent. His observations were made