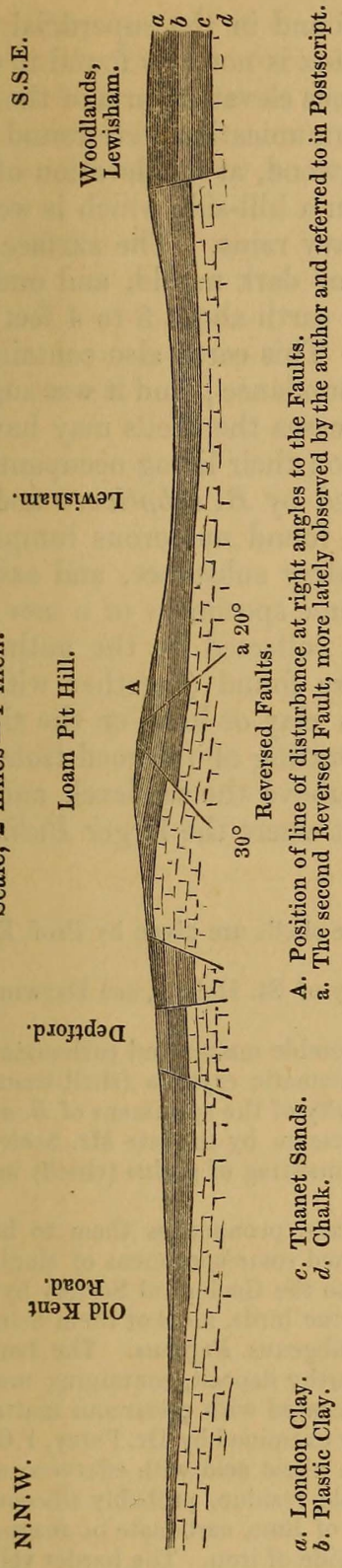

Fig. 3.—*Section showing the position of the Faults at Loam Pit Hill.*

Scale, 2 miles = 1 inch.

being towards the E.N.E. at an angle of 5°, we find $\phi = 9°$. This would bring the line of fault through the middle of a tolerably long cutting 150 yards off. No trace of it, however, appears there; whence it probably is not of considerable extent either horizontally or vertically.

About 200 yards from this fault, and at right angles to its direction, a line of disturbance runs N.N.W. and S.S.E. (fig. 3, A). It is marked by a sudden increase of dip, from 3° to 11°, and by a series of small faults, greater in amount than the above-mentioned, but producing no displacement exceeding 2 feet. It illustrates, however, the well-known law of elevation, and is repeated on a much larger scale at Hornpark, near Mottingham, where the E. and W. faults of Lee, Eltham, and Woolwich are intersected by a great fault running N. and S.

P.S. Another small reversed fault has been exposed since the above paper was read. This also runs E.N.E., with an angle of fracture of only 20°, but having the upcast on the north side, instead of on the south. A line representing its position has been introduced into fig. 3, a little to the north of A. It supplies further evidence of the lateral pressure above alluded to. [April 16, 1852.]

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3. *Notes on* St. Helena. By J. H. Blofeld, Esq., F.G.S.

[Abstract.]

In this paper the author briefly noticed the general external characters of the island and some of its geognostical phænomena, and more especially described the conditions under which the fossil shells of

Bulimi, *Succineæ*, and *Helices** are found in the superficial soils of the island†. The *Bulimus auris-vulpina* is not now found in a living state. The shells are met with in various elevated parts of the island. The specimens accompanying this communication were found by the author about half a mile behind Longwood, at an elevation of about 1700 feet above the level of the sea, on a hill-side which is worn into numerous clefts or ravines by the heavy rains. The surface of the hill to a depth of 5 to 6 feet consists of dark mould, and under this is a stratum of a greyish-brown friable earth about 3 to 4 feet thick; in this latter bed the shells occur‡. This earth also contains bird-bones§, perfect and fragmentary, in abundance; and it was suggested by the author, that possibly in some cases the shells may have been brought to the spot by birds that fed on their living occupants.

The *B. auris-vulpina* is accompanied by *B. subplicata* and *Helix bilamellata*. In the "shell-bed" are found numerous lumps of several sizes, composed of a white powdery substance, and associated with a harder yellow substance‖. Some specimens of a new species of *Bulimus* (*B. Blofeldi*, E. Forbes), collected by the author, also accompanied this paper. These were found (together with some young *Helix bilamellata*) in a reddish clay or loam on the side of a hill overlooking the "Briars" in the cutting of the road from James Town to Longwood, about 1200 feet above the sea-level, and about two miles in a direct line from the spot where the larger *Bulimi* were found.

* Detailed descriptions and figures of these shells are given by Prof. E. Forbes in the next following communication.

† For a detailed description of the Geology of St. Helena, see Darwin's 'Volcanic Islands,' pp. 73 *et seq.*

‡ This deposit is composed chiefly of vegetable matter and carbonate of lime. The latter is present, both in the form of prismatic crystals (shell-tissue?), and as the coating of vegetable fibres. The majority of the specimens of *B. auris-vulpina* presented to the Geological Society's Museum by the late Mr. Seale, F.G.S., were imbedded in a whitish coherent sand, consisting of grains (chiefly inorganic) coated with calcareous matter.

§ Prof. Owen, having examined these bones, pronounces them to belong to marine birds. The Professor has also examined some specimens of similar bones from Turk's Cap Bay, St. Helena, presented to the Geological Society by Captain Wilkes, R.N.; these also are all bones of marine birds, most of them being of the Petrel kind; some of them belong to the subgenus *Puffinus*. The bones from Turk's Cap Bay are from a greyish-brown earthy deposit, containing much inorganic sand, the grains of which are partially coated with calcareous matter.

‖ This white substance has been chemically examined by Dr. Percy, F.G.S., who observes, that it consists of matter soluble in nitric acid with effervescence, with the exception of a small quantity of insoluble residue, probably siliceous. The soluble matter is carbonate of lime, sulphate of lime, carbonate of magnesia, and phosphoric acid in combination with sesquioxide of iron. The harder yellow portion was found to contain organic matter, possibly the cause of the yellow colour, and to be similar in constitution with the white powder.

This substance may possibly be the same as that referred to by Mr. Darwin in the footnote at page 87, 'Volcanic Islands.' Under the microscope much prismatic matter is visible, which might readily be taken for the carbonate of lime liberated from the prismatic cells of shell-tissue; but, as this withstands to some extent the action of nitric acid, it would appear to be sulphate of lime.