

VESUVIUS

SINCE writing on May 3 Vesuvius has continued to pour forth a continuous stream of lava. From the lowering of the general level of lava in the main chimney no reflection could be seen at its mouth, as is usually the case. This state of things continued till the 6th, when the vapour could only escape in intermittent puff in consequence of the accumulation of *débris* from the crumbling edges of the inner crater edge. As these puffs escaped, they resembled balls of dark grey smoke, from which fell a shower of fine ash, the result of the grinding up of the fine materials that had fallen in as above described, and partially blocked the upper outlet. The crater plain was scattered over with ash and rounded fragments of lava from which that had been ground off. Soon after a faint glimmer was visible, which gradually increased each night until it came to a stationary point, since which little change has taken place. The lava still continues to flow with more or less regularity, but from the small quantity it only gutters and collects on the slope of the great cone. The whole series of events since May 2 is identical with that occurred under similar circumstances in December, 1881, and January, 1882, which I have already described in these pages. The whole sequence of phenomena are easily explicable on the most simple mechanical principles, and do not require that *vulcanological magic* which, even at the present time, is too often employed in describing volcanoes or earthquakes.

I may mention that the above estimate might seem too low as the surface of the streams moved quicker (about 1 m. in 17 seconds), but the lava was particularly viscous on this occasion, and towards the edges it could not have progressed more than the above distance in two or three minutes. A similar retardation no doubt occurred wherever in contact with its channel, so that I think the estimate of 1 m. per minute is a very fair one. If we allow an average outflow of 5000 cm. during the last twenty-two days (*i.e.* from May 2 to 24), which I am sure many would think under-rated, we have the prodigious output of 110,000 cm. ; the product of what would usually be called a very small eruption. But the flow has not stopped, and shows no indication of so doing.

This large amount of material, added to the surface of the great cone, is already making a difference in its outline, and should the outflow continue for nearly three years, as occurred after the December, 1881, outburst, the Vesuvian cone will have another gigantic hump of lava to spoil the graceful curves of its back.

Either as the result of bad writing or of printer's errors some obvious mistakes have crept into my last communication. For "*unattached* pyroxene crystals" read *un-attached*. For "*salbam*" read *salband*. Read for "about one metre per *second*," about one metre per *minute*.

Naples, May 24

H. J. JOHNSTON-LAVIS

THE RUAHINE RANGE, NEW ZEALAND

IN the summer of 1843, Mr. Colenso being at Hawke's Bay, first saw the Ruahine Range, looking sublimely grand under its crest of virgin snow. Hearing at this time of natives living secluded in the interior, in the country lying between this range and the famed central volcanic district, Tongariro, he determined to visit them, and he has lately published a most graphic and interesting account of several visits to and over the range, which were accomplished between the years 1845 and 1847. This narrative is, as would be expected from a botanist like the author, largely interspersed with valuable notes on the flora, and there are also some on the fauna of that region. It is also somewhat interspersed with quotations, for the most part appropriate ones, from the author's favourite poets. It is not necessary that we

should make any comments on the fact that this little memoir does not appear in the *Transactions* of the New Zealand Institute, already so full of various important contributions to our knowledge of New Zealand forms from Mr. Colenso's pen, for the publishing Board of that Institute, having declined to publish more than an abstract of it, the memoir was, by request, returned to the Hawke's Bay Philosophical Institute, before which Society it had originally been read, and it has been by them laid before the scientific world with additional and copious notes. The first attempt to cross the range was made under great difficulties in February, 1844: the weather was bad, heavy rain flooded the rivers and mountain streams, and the guide had forgotten the route. Despite all disadvantages, many a rare and several new plants were found. On a Saturday night, after a slender supper amid the deepening gloom of the beech forest, we read: "Here, pendent from some of the trees, hung a most lovely species of *Loranthus* (*Loranthus flavidus*), while on many other trees that fine species *L. tetrapetalus* formed dense bushes, bearing crimson flowers in profusion, so that in some of the more open spots among the closely-growing trees the whole forest wore a reddish glare." At the very spot where they halted, a fine bushy composite shrub with hydrangea-like leaves was gathered, which has been since named by Sir J. Hooker, *Olearia Colensoi*. Fatigued with the day's work the party slept till 10 o'clock on the Sunday, and then awoke to find themselves completely invaded by a large "blue-bottle fly," which, it appears, inhabited the beech-wood in countless numbers, and was most teasing and audacious: their blankets and woollen clothing had been attacked, and were literally filled with the fly eggs, and the hair of the natives' heads had also similarly suffered. These blue-bottles spoiled the Sabbath day's rest; they had never before been met with by Mr. Colenso. We wonder if the species has been recognised by Baron Osten Sacken, who has recently been engaged in describing New Zealand Diptera. After two days' more fatigue, the party were obliged to descend without crossing the summit, being nearly starved into the bargain. But amid all these troubles, Colenso writes that he at least had some joys, certainly, under the circumstances, unknown to the natives, in that he discovered, on the return, several fine new plants (*Alsophila Colensoi*), several new species of *Coprosma*, some of which grew so compactly together that in some places it was impossible to get through them, and so they had to walk *upon* them. Here, but only in one spot, that beautiful fern, *Hypolepis millefolium*, was found. Many beautiful and new forms of *Veronica*, as *V. buxifolia*, *V. nivalis*, and *V. tetragona*, this last species in its barren state resembling much the branch of a *Podocarpus*. Here we venture to interpose a wish that Mr. Colenso would write an essay on the mimetic resemblances of the species of the genus. But this was not all: a little further up there were found "splendid *Celmisias* and *Ranunculuses* in countless numbers, intermixed with elegant *Wahlenbergias* and beautiful *Ourisias*, *Euphrasias*, *Gentians*, *Dracophyllums*, *Astelias*, and *Calthas*, and many others. Here were plants reminding one of those of our native land, with rare and little known novelties." After the first burst of surprise, the great difficulty of carrying off these prizes presented itself: no collecting materials were at hand. There was no time to lose. "First I pulled off my coat, and made a bag of that; then, driven by necessity, I added thereto my shirt, and, by tying the neck, got an excellent bag. Lastly the crown of my hat held a few. Fortunately the day turned out a fine one, and on returning to the camp the night was spent placing them among spare clothing, bedding, and books." Of this "find" drawings of nearly fifty were published by Sir W. J. Hooker, or Sir J. Hooker, in the "*Flora Novæ Zelandiæ*" or the "*Icones Plantarum*." The graphic account of that terrible plant, *Aciphylla Colensoi*, we must