

(it was only a few days before the disastrous expedition of Major Thornburgh, and, unknown to us, the surrounding tribes were already in a ferment), we emerged from the mountains upon the great sea of black lava which seems to stretch illimitably westwards. With minds keenly excited by the incidents of the journey, we rode for hours by the side of that apparently boundless plain. Here and there a trachytic spur projected from the hills, succeeded now and then by a valley up which the black flood of lava would stretch away into the high grounds. It was as if the great plain had been filled with molten rock which had kept its level and wound in and out along the bays and promontories of the mountain-slopes as a sheet of water would have done. Copious springs and streams which issue from the mountains are soon lost under the arid basalt. The Snake River itself, however, has cut out a deep gorge through the basalt down into the trachytic lavas underneath, but winds through the desert without watering it. The precipitous walls of the cañon show that the plain is covered by a succession of parallel sheets of basalt to a depth of several hundred feet. Here and there, I was told, streams that have crossed from the hills and flowed underneath the lava desert issue at the base of the cañon walls, and swell the Snake River on its way to the Pacific. The resemblance of the horizontal basalt sheets of this region to those with which I was familiar at home brought again vividly before my mind the old problem of our Miocene dykes and Richthofen's rejected type of "massive" or fissure eruptions. I looked round in vain for any central cone from which this great sea of basalt could have flowed. It assuredly had not come from the adjacent mountains, which consisted of older and very different lavas, round the worn flanks of which the basalt had eddied. A few soli-