

the paper already referred to; both the mirrors stood the test satisfactorily, the polish of the steel being very slightly the best.

These experiments appear to show that the generally received formulæ for metallic reflection are approximately correct, but that the actual intensity of the reflected light is always less than the theoretical intensity, and that therefore, unless this be due to defects in the metallic surfaces, the formulæ do not completely express the laws of metallic reflection. If, as appears to be the case, a change in the reflective power of a plate can occur without any change in the values of the principal incidence and azimuth, it is necessary to regard the formulæ as only approximately true, and there is additional reason for thinking that, as Professor Stokes has suggested, three constants are required to define a metal optically.

I hope hereafter to determine the amount of light reflected by films of silver chemically deposited on glass, and also to make some determinations of the amount of radiant energy reflected by metallic surfaces at various angles, the experiments of MM. de la Prevostaye and Desains on this point having been but few in number.

III. "Extracts from a Report on the Volcanic Eruption in Sunda Strait by Commander the Honourable F. C. P. VEREKER, H.M.S. 'Magpie,' dated Singapore, October 22, 1883." Communicated by Sir FREDERICK EVANS, K.C.B., F.R.S. Received December 15, 1883.

[PLATES 2, 3.]

\* \* \* On the 18th instant I entered Sunda Strait, passing east of Thwart-way Island. This island had been reported to be split by the eruption into several portions. This is incorrect.

The island is intersected by low valleys in several places, these being covered with tall trees did not show so prominently formerly as they do now. The whole of the vegetation having been swept away by the tidal wave the island at a short distance off is apparently divided, the low necks joining the higher portions being only visible on close approach.

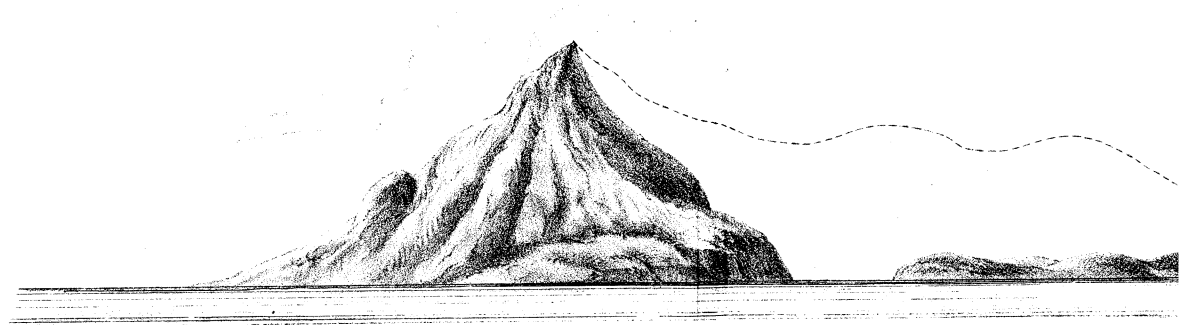
The surface of the Strait in this neighbourhood is covered with extensive fields of floating pumice stone, often in one to two foot cubes, through which the ship easily forced her way.

\* \* \* \* \*

I inclose sketches which I trust will convey the general appearance better than a written description. The whole of the neighbourhood is covered with greenish-yellow mud, and all traces of vegetation are everywhere destroyed.

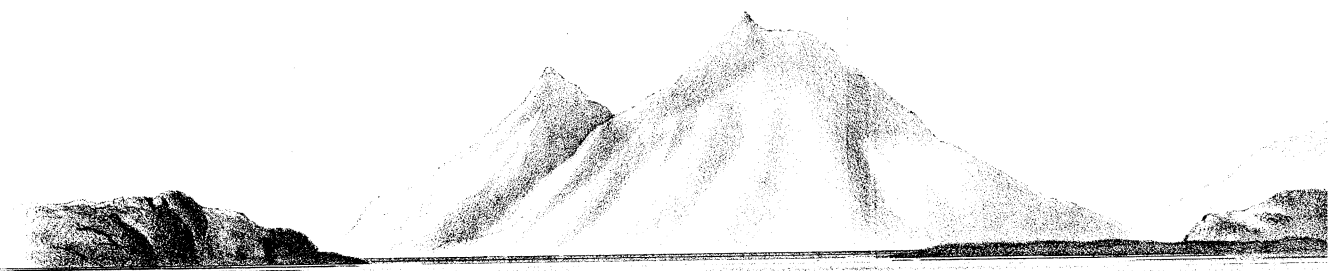
*Vereker.*

*Krakatoa*



*Krakatoa Island.*  
*The broken line shows former contour.*

*Lang Island. Ver*



*Long and low spit.*



*Verlaten Island.*

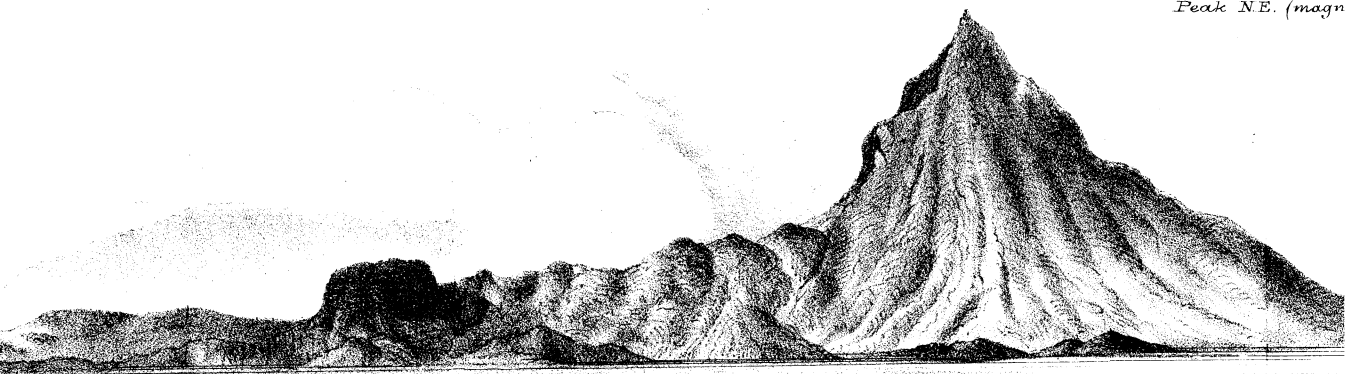
INDIAN OCEAN — SUNDA STRAIT.

Krakatoa Island, after the Eruption of August 1883, from sketches taken in the following October.

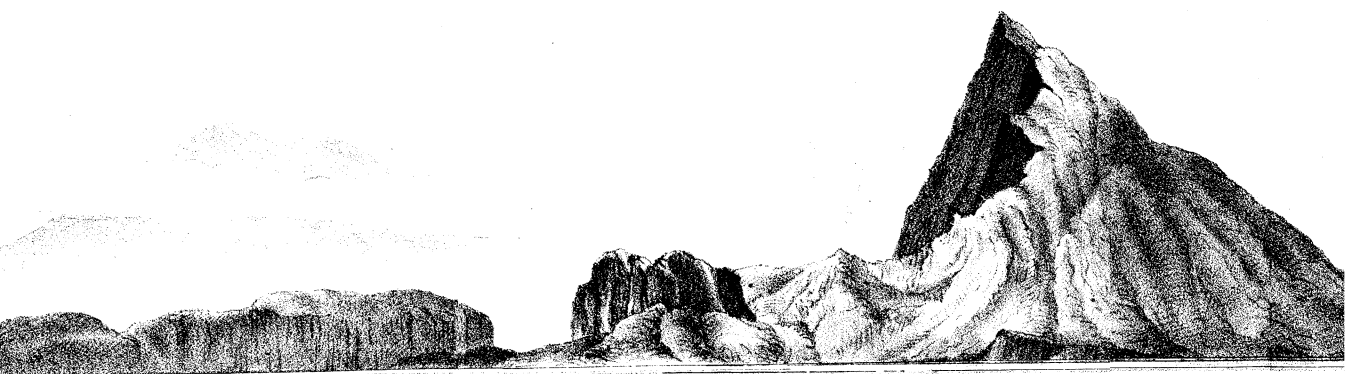


Verlaten Island.

Sebesie I.  
Peak N.E. (magn)



Krakatoa  
Peak N.N.E. (magnetic)  $3\frac{1}{2}$  miles.



Lang Island.

Krakatoa  
Peak N.E. (magnetic) 3 miles.

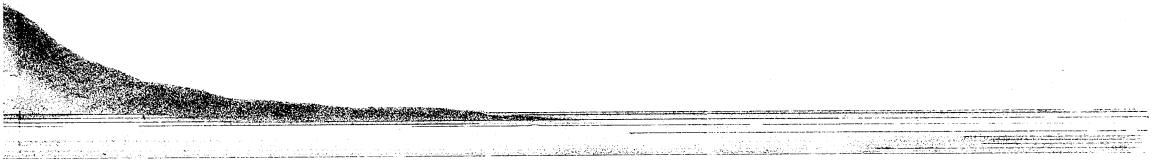
ier.



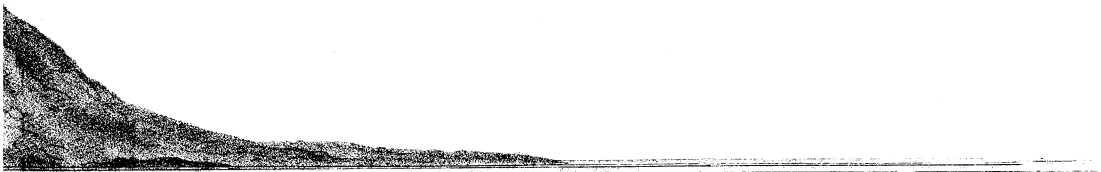
Sebesie Island  
E. (magnetic) 13 miles.

Sebooko Island.

A



B



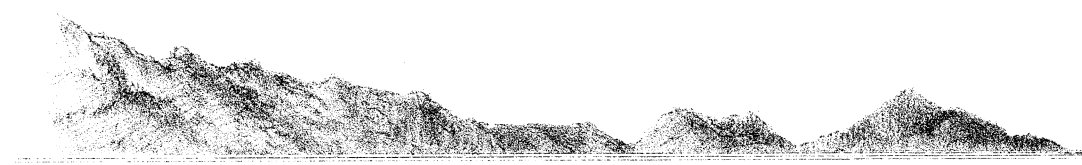
C

Vereker.

Krakatoa I



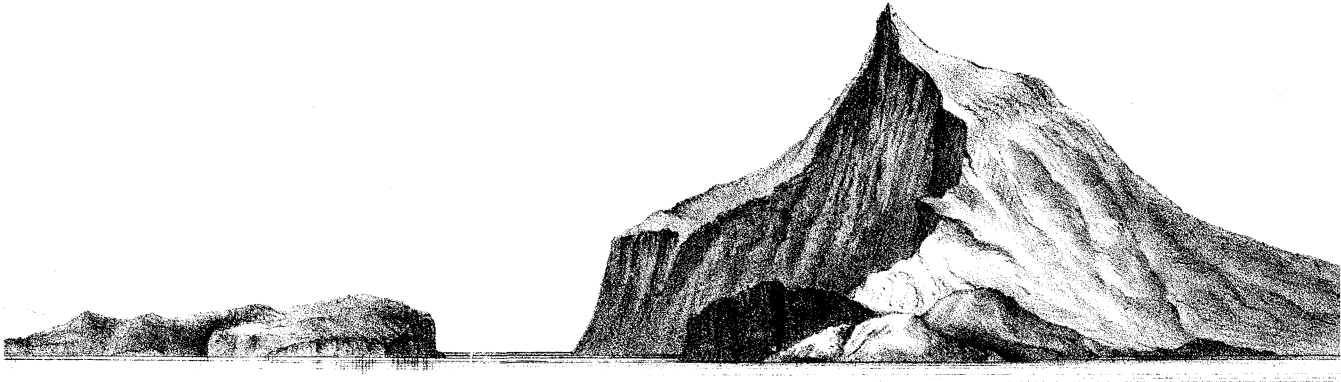
Verlaten Island



Sketch of former sta  
The new crater formed in May 1883, is from a sketch by the Capt

INDIAN OCEAN — SUNDA STRAIT.

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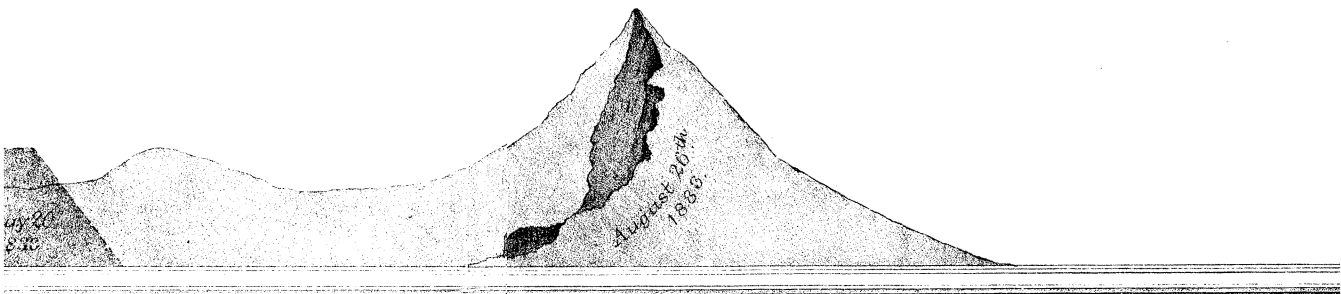


*Lang Island*

*Krakatoa  
Peak East (magnetic)  $4\frac{1}{2}$  miles.*



*Thwart-way Island.  
Summit ~ N.N.E. (magnetic) 12 miles.*



*Former shape of Krakatoa in the year 1870.  
By the Captain of H.N.M.S. Queen Emma.*

*Peak N.E. (magnetic) about 8 miles.  
The cliff formed by the Eruption in August 1883, is shown by the dark shading.*

er.



D



The Islands are totally devoid of vegetation, everywhere scored and seamed by the lava streams, and covered with a deposit of greenish brown mud.

C<sup>a</sup>

West Newman & Co lith.

I communicated personally with the captain of the Netherlands frigate "Queen Emma" stationed on the spot, and was informed by him that the changes are considerably more extensive than was at first thought, and that Verlaten Island is still in a state of activity as well as Krakatoa itself.

From observation he thinks that another eruption is impending, but that Verlaten Island will be the centre of disturbance.

The Netherlands Government vessel "Hydrograaf" obtained a sounding of 100 fathoms without reaching bottom, in the centre of the group and off the cliff falling from Krakatoa Peak.

The two new islands are low mud and pumice banks, their configuration is continually altering, and I was informed that they are gradually subsiding.

\* \* \* \* \*

It is still impossible to examine Lampong Bay, but the pumice stone is now beginning to float out.

The light on Fourth Point (Java) has been temporarily replaced by one of the 6th order, visible five miles, but beside this there are no signs of life on the Java shore. The whole coast is covered with the *débris* of trees, &c., demolished by the earthquake sea-wave, and over all lies a thick incrustation of volcanic mud.

During the height of the eruption a terrific whirlwind and a fierce south-westerly gale, apparently local, was experienced.

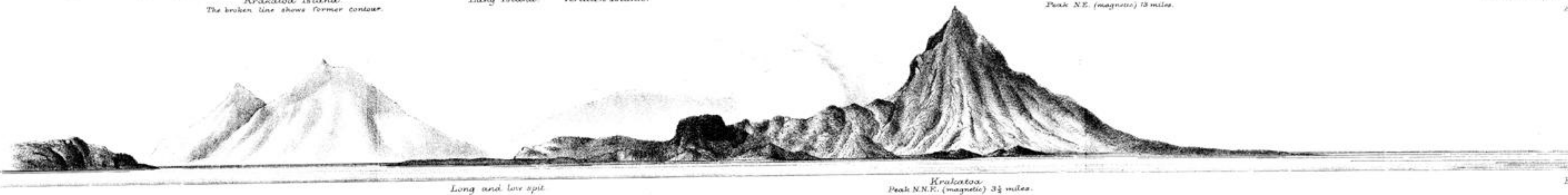
\* \* \* \* \*

IV. Report from H.B.M. Consul at Batavia, inclosing Extract relating to the Volcanic Outbursts in the Sunda Strait, from the Logbook of the Steam-ship "Governor-General Loudon." Communicated by R. H. SCOTT, F.R.S. Received December 4, 1883.

*Sunday, 26th August.*—Left the roadstead, Batavia, at 8.10 A.M., and steered through the inside channel. At 9.30 A.M., steering between the islands Great Kombuis (or Lantjang) and Pulo Lakki (or Mometer or Cannibal Island), sighted the Kombuis red buoy due north, while at 10 A.M. the white Cannibal buoy lay due south. Rounded Point St. Nicholas, and taking our bearings from the land proceeded through Sunda Strait to the roadstead of Anjer, where we anchored at 2 P.M.

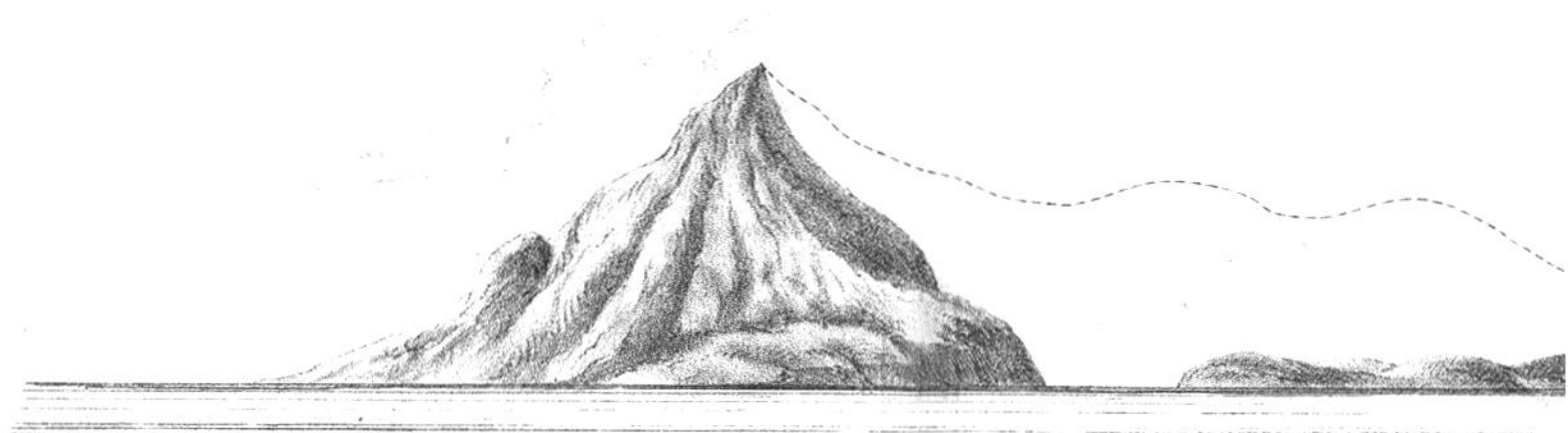
At Anjer we took on board 111 passengers, coolies and women bound for Sibogha, and left Anjer roadstead again at 2.45 P.M., and taking our bearings from the land we ran past Pulo Soengjan, or "Right in the Fairway" Island, past Hog Point and Lampong Bay, and then discovered that the island of Krakatau was casting forth enormous





*Vereker.*

*Krakatoa*

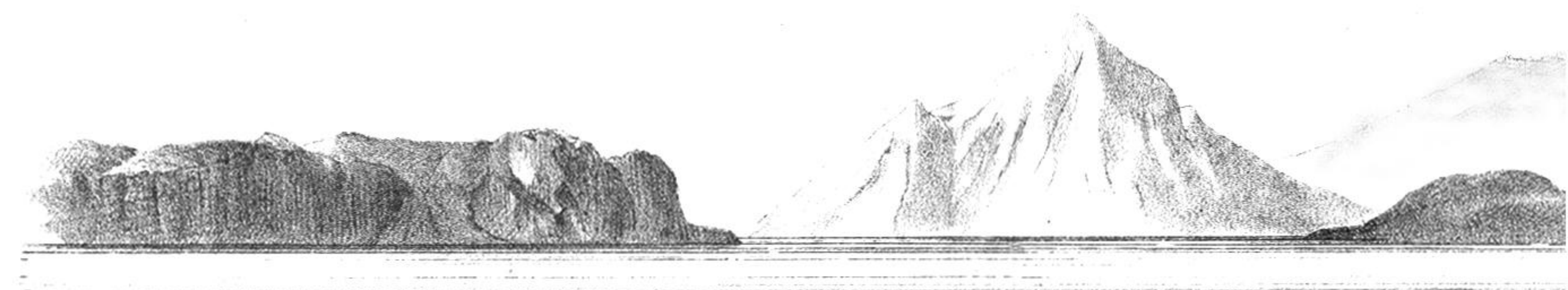


*Krakatoa Island.*  
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*Long and low spit*



*Verlaten Island.*



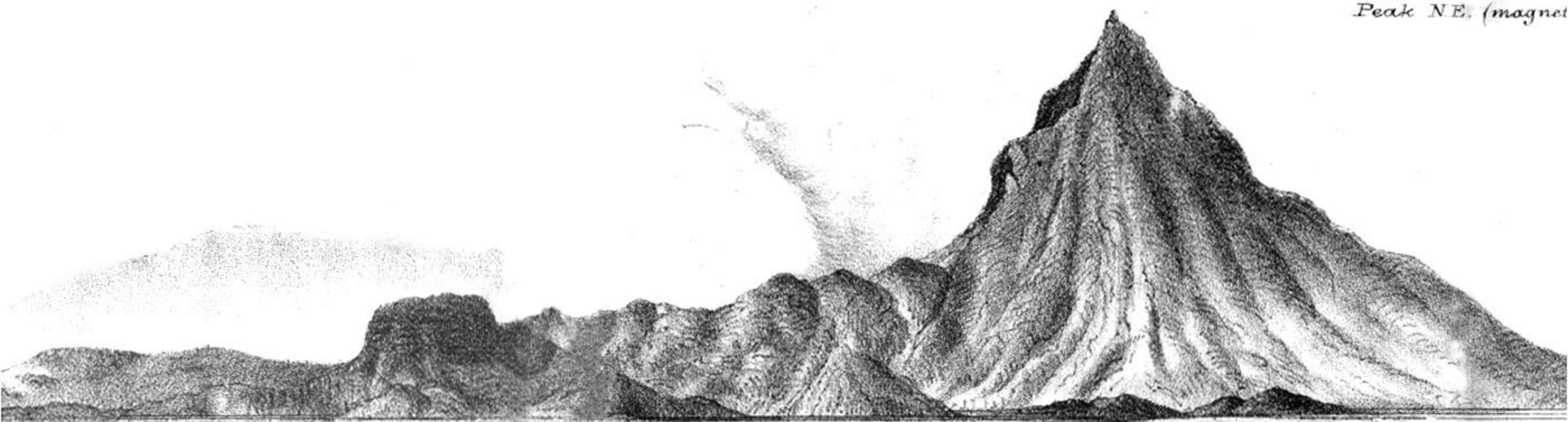
INDIAN OCEAN — SUNDA STRAIT

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Sebesie Island.  
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Krakatoa  
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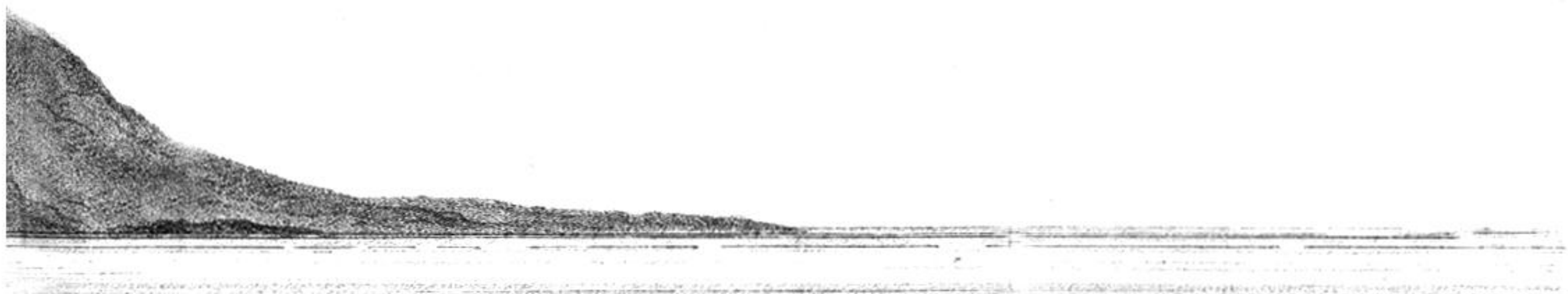
Sebesie Island  
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Sebooko Island.

A



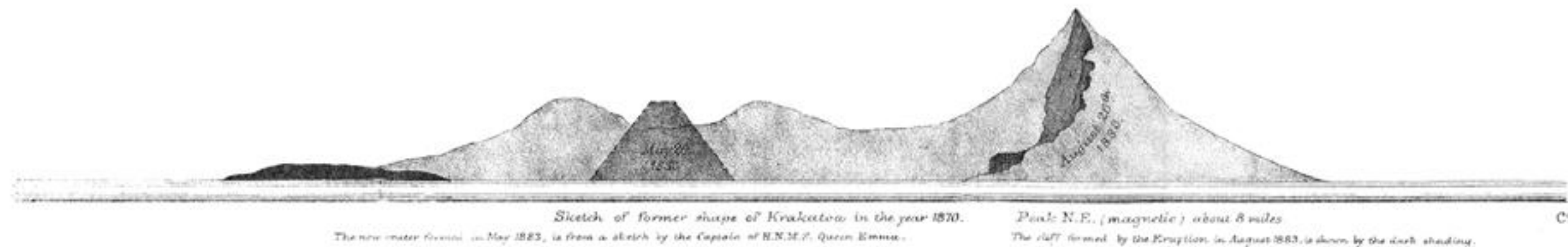
B



C



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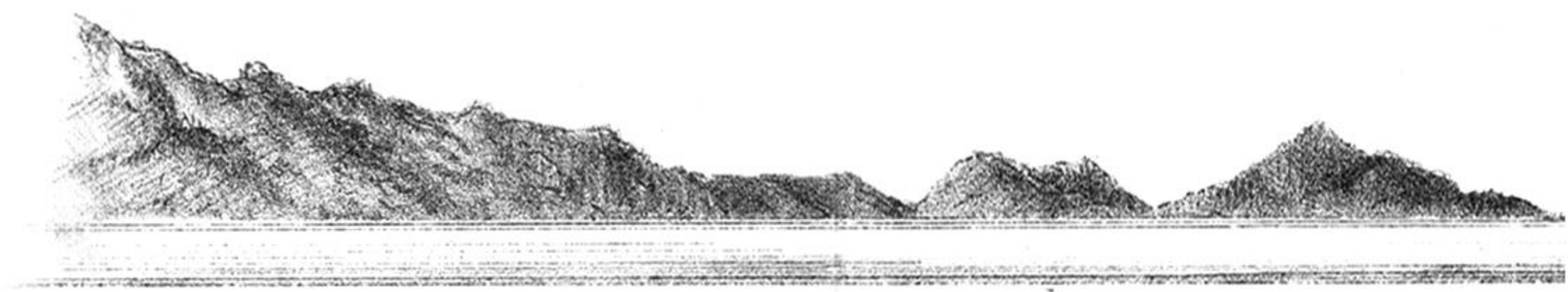
*The Islands are totally devoid of vegetation, everywhere scored and seamed by the lava streams, and covered with a deposit of greenish brown mud.*

*Vereker.*

*Krakatoa 1*



*Verlaten Island*



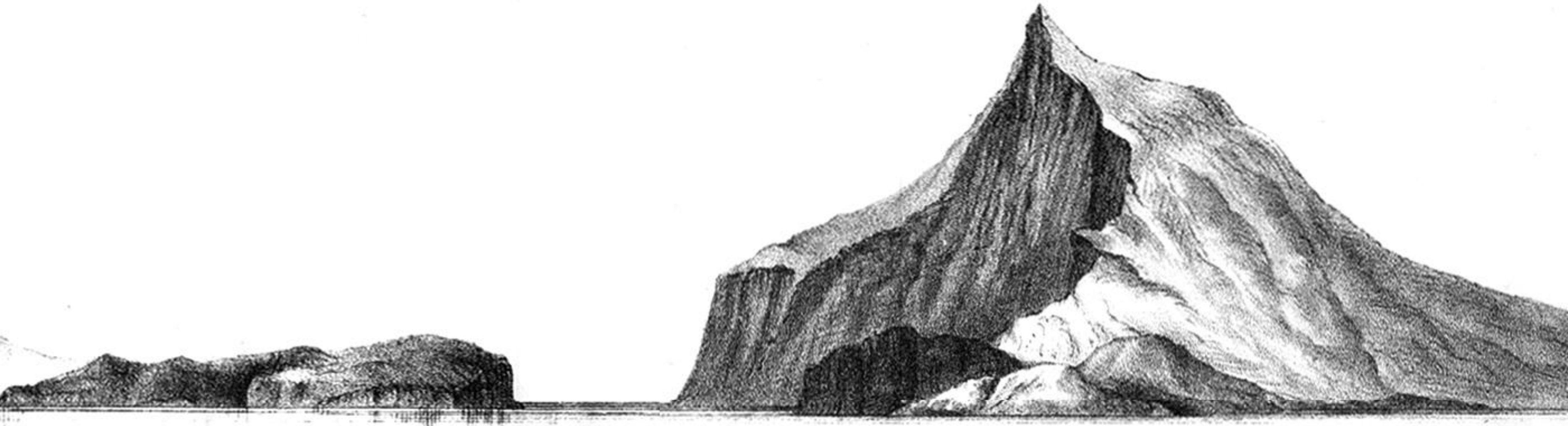
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