

*Citation:*

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**Geology.** — “*Examination of specimens of sand from borings done at the works of the outer harbour at Scheveningen*”. By J. A. GRUTTERINK. (Communicated by Prof. J. L. C. SCHROEDER VAN DER KOLK).

H. WORTMAN Esq. engineer at those works, was kind enough to send six specimens of sand to the Geological and Mineralogical department of the Polytechnical Institute at Delft.

Those specimens had been taken, respectively at depths of 26.50 M., 27.50 M.; 28.50 M.; 29.50 M.; 31.50 M. and 32.50 M. under New Amsterdam level. It could however not be guaranteed with perfect certainty that the exact order had been observed.

Stated was that sand, up to 26.50 M., being ordinary dunesand, had not been collected.

The fact that all the specimens contained gross-grained matter rendered it impossible to use at once the separatory-funnel. So they were sieved; the sieve having openings of 0.5 cM.

The examination of the gross-grained matter yielded not much of a result.

In it were found pieces of colourless and of white quartz, up to the size of 1 cM., pieces of slate and fragments of shells. Granite was not found.

The percentage of heavy minerals in the finer matter was fixed by separating it in a separatory funnel, with the help of Bromoform. For the purpose two samples of 5 Gr. of each specimen were taken. The percentage was very low :

	I.	II.	III.	IV.	V.	VI.
<i>a</i>	0.10	0.13	0.25	0.07	0.15	0.24 %
<i>b</i>	0.09	0.10	0.22	0.10	0.10	0.11 %

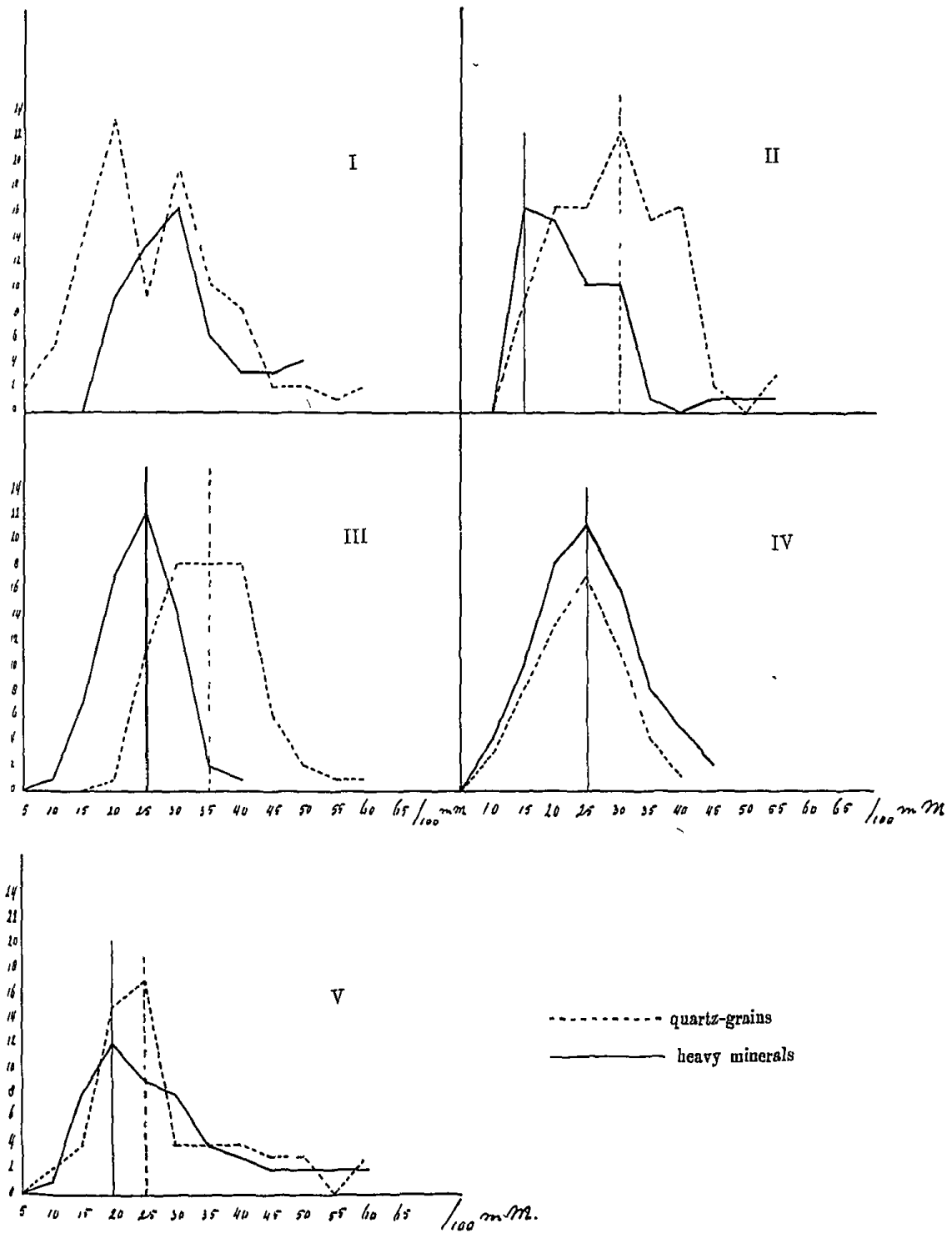
Microscopic examination showed the grains to be rather sharp-edged.

Amphibole was found in all specimens, even more abundant than garnet; only in specimen IV, amphibole was not predominating.

The size of the grains was also settled microscopically, by moving the object-glass parallel with itself across the stage and accepting as the size of the grains, not its greatest dimension, but its projection on the micrometer.

So as to avoid passing over a disproportionate number of big grains, part of which easily remain out of the field of observation,

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only those grains were measured which were passing through the very middle of the field.

Of specimen VI the size of the grains could not be fixed, the matter for the greater part (90%) being too coarse to be treated in that way; a proper set of sieves not being at my disposal.

The result of the examination as to the size of the grains is graphically shown in the additional table.

Grouped together were grains up to the size of 0.05 mM., those from 0.05 to 0.10 mM. etc. From this table appears that in specimen II the average size of the quartz-grains considerably exceeds that of the heavy minerals, although, in a smaller degree, specimen III shows forth the same, whereas in specimen IV there appears to be no difference in the average size of the grains; also in specimen V we can hardly speak of a moving apart of the two lines. Specimen I is left out of consideration, because, on account of the irregular quartz-line, no conclusion can be drawn as to its average size.

Judging from the abundant quantity of Amphibole; from the low percentage of heavy minerals and from the sharp edges of the grains it seems not presuming too far to consider the examined sands, a deposit of the ice. The influence of water however cannot be denied for how otherwise can be explained the presence of so many fragments of shells and the washed character of specimens' II and III. From the graphical table, one feels inclined to conclude that the influence of the water has been greater on the surface than deeper down.

It is to be regretted that no specimen has been kept of the upper sand. Now we miss for our comparison, a purely alluvial sand formed on that spot.

's-Gravenhage, 21. Februar 1902.

**Astronomy.** — *"The relation between the brightness of a luminous point and the moments at which we observe its sudden appearance or disappearance."* By Prof. H. G. VAN DE SANDE BAKHUYZEN.

At the meeting of the Royal Academy May 29<sup>th</sup> 1886 I read a paper on researches made to determine the influence of the brightness of a luminous point on the moments at which we observe its sudden appearance. These researches have later been continued and in the "Archives Néerlandaises" Serie II, Vol. VI, p. 727 the results of all these observations have been published, together with an explanation of the fact that a great many astronomers observe the transits