

# Meteoric Shower in North East Greenland?

By

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As a member of the Danish Peary Land Expedition (3) team who spent the winter of 1949-50 in Peary Land I had the opportunity to make four trips by air across North East Greenland from Zackenberg on the east coast to Peary Land. The routes were different each time, and only once—on the last trip—I was able to study the occurrence described in the present paper. On their arrival at Brønlunds Fjord the air crew<sup>1)</sup> told me that when flying across I. C. Christensens Land (the peninsula situated between Independence Fjord and Hagens Fjord) they had observed a large number of rings near Hagens Fjord (Fig. 1), presumably volcanic craters. A similar ring was supposed to exist on Frysefjældet at Brønlunds Fjord (loc. 1.). In spite of a thorough reconnaissance by air during the snowfree period and crossing and recrossing the area on foot during the autumn when the field was thinly covered with snow, I never found the latter ring. The present is a description of the occurrence at Hagens Fjord. On our return flight I only became aware of the rings when the plane was right above the area in question. Observations had to be made hurriedly and a photograph taken (Fig. 2). Unfortunately the latter was blurred as the light did not allow for a sufficiently brief exposure, and the air current round the engine caught the lens-shade of the camera.

The rings were situated on a plateau of red sandstone presumably 5-700 meters above sea level. The sandstone appeared to be of the type seen at Independence Fjord, i. e. pre-Cambrian sandstone of the Thule complex. The whole plateau was almost level and of an evenly distributed colour broken by a number of dark spots and rings of varying sizes. I counted over fifty, and on the photograph (Fig. 2) thirty can with certainty be distinguished. As already mentioned, the size of the spots and the rings varied somewhat, but definite figures cannot be given as the observation was made at a distance of more than 800 meters. The spots as well as the rings were circular. Inside, the latter had the same red colour as the surroundings. Unfortunately it was not possible to determine whether the rings were thrown in relief, or whether the spots were flat or raised. To me the only explanation of the origin of the phenomena is that they are traces of a meteoric shower. The round spots might be small meteors and the circles craters left by larger ones. All other theories seem hard to explain. In the districts in question the red Thule sandstone is of course intersected by dark intrusives (*vide* 1) which might have supplied material for a glacier

<sup>1)</sup> Oberst E. OVERBYE and Orlogskaptajn F. W. BISTRUP.

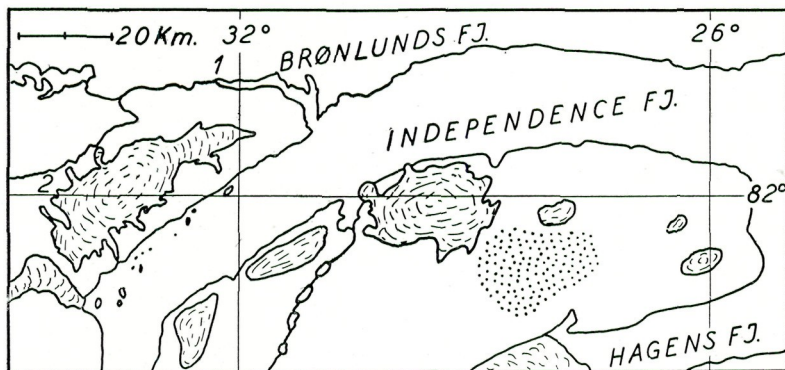


Fig. 1. Sketch map of the Independence Fjord area. The principal locality, marked with dark rings (Fig. 2), is probably situated within the dotted area.



Fig. 2. Traces of a meteoric shower?

transportation to the plateau. This, however, would only account for the dark spots. The circles must be given a different interpretation. Dried-up small ponds with dark mud sediments is not a very plausible explanation since all spots and rings are circular. The theory is rendered further improbable by the fact that the whole thing is a purely local occurrence. Nothing like it has been observed in these regions by the writer nor—as far as is known—by others apart from the single crater observed on Frysefjældet (loc. 1.) by the airplane crew, and another one near loc. 2, fig. 1, observed by Cand mag. BØRGE FRISTRUP. Had the occurrence been the result of a weathering or drying-up process, it would doubtless have been more

scattered over the whole region. It is highly improbable that the phenomena should be of glacio-morphological origin. If so, they are hitherto unknown variants of this category. Nor are they mud volcanos as we know them elsewhere in Greenland. In spite of all its defects the observation definitely excludes such a possibility. The occurrence of such volcanos involves the presence of bitumenous resources in the base which is most unlikely in the red sandstone or in the pre-Cambrian (crystalline) base. Lastly, morphologically the circles might be similar to the solfatara-like craters observed near Brønlunds Fjord by J. TROELSEN in 1947 (*vide* 2). In that case, however, it would be hard to explain the black colour.

The only theory still left seems to be that the occurrence is the result of a meteoric shower. However incomplete the present report may be, its justification is that it might draw the attention of future travellers to the occurrence. In view of the rather vague information as to position the place would have to be localized from the air and then reached by helicopter or on foot, in which case the area might be approached in spring by sleigh or similar means of transport.

### RESUMÉ.

Under en af de flyvninger, som Dansk Peary Land Ekspedition i juli 1950 foretog over Nordøst Grønland, havde forfatteren lejlighed til at iagttage et areal med spredte runde, sorte pletter og ringe paa et plateau nær Hagens Fjord. Det formodes, at disse fænomener skyldes en meteorregn, der er faldet her. Det bemærkes, at en saadan bestemmelse, der er foretaget fra luften, naturligvis er behæftet med stor usikkerhed.

Mineralogisk Museum.  
København, April, 1953.

### LITERATURE.

1. ELLITSGAARD-RASMUSSEN, K. Preliminary report on the geological field work carried out by the Danish Peary Land Expedition in the year 1949-50.—Medd. Da. Geol. For. Bd. 11. He. 5. 1950.
2. TROELSEN, J. C. Contribution to the geology of the area round Jørgen Brønlunds Fjord. Peary Land. North Greenland.—Medd. o. Grøn. Bd. 149. Nr. 2. 1949.
3. TROELSEN, J. C. Danish Pearyland Expedition 1947-50.—Polar Record. Vol. 6. Nr. 44. July 1952.