

MINERALOGICAL ANALYSIS OF THE "BROWN RAIN" OF FEBRUARY 7th, 1972

R. SCHOORL¹⁾

On the evening of February 7th, 1972 a brown rain fell in the northern provinces of the Netherlands. A sample collected at Grouw by Mr. J.J.G. de Jong of the "Leeuwarder Courant" was analyzed mineralogically in our laboratory. It was suspected that the brown colour of the rain was caused by dust transported at high altitude by wind from the south (vander Marel, 1948).

METHODS OF ANALYSIS AND RESULTS

The dust was separated from the water by centrifuging and analyzed mineralogically with a Guinier-de Wolff X-ray diffraction camera using Co-K α radiation (fig. 1). The analysis revealed the possible presence of palygorskite for which



Fig. 1
Guinier-de Wolff X-ray photograph of the "brown rain" separate.

reason a confirming electronmicrograph was prepared (fig. 2).

The Guinier photo showed the presence of the following minerals: chlorite, palygorskite, mica, kaolinite, albite, hematite, quartz and calcite. The colour of the dry dust was determined with the help of the Standard Color Chart and yielded 7.5YR 6/9 (light brown).

DISCUSSION

The present results indicate that the dust originates from an arid region. Vander Marel (1948) investigated similar but more yellow material which he suggested to be Sahara-

¹⁾ Department of Soil Science, State Agricultural University, Wageningen, The Netherlands.

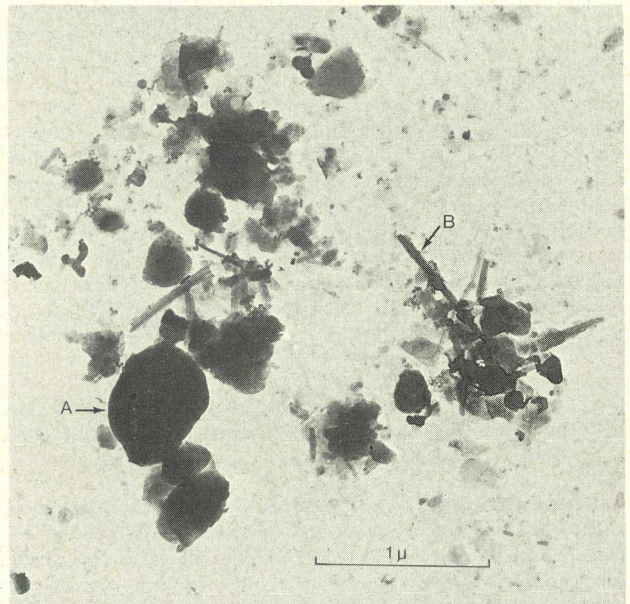


Fig. 2
Electron-micrograph of the "brown rain" separate. A: quartz; B: palygorskite.

dust although he did not report palygorskite which is known to be specifically formed in calcaerous soils in warm arid regions (Wiersma, 1970; de Meester, 1971). Hematite may occur there too.

REFERENCES

- Marel, H.W. van der (1948) – Onderzoek van een recente aeolische afzetting in Nederland. Kon. Ned. Aard. Gen. 65: p. 792.
- Meester, T. de (1971) – Highly calcareous lacustrine soils in the Great Konya Basin, Turkey. Agr. Res. Rep. 752. PUDOC, Wageningen.
- Oyama, M. and H. Taehara – Revised Standard Soil Color Charts. Japan.
- Wiersma, J. (1970) – Provenance, genesis and paleogeographical implications of microminerals occurring in sedimentary rocks of the Jordan valley area. Pu-Fys. Geogr. Bo. Univ. Amsterdam.