



**CRCLME**  
Cooperative Research Centre for  
Landscape Evolution & Mineral Exploration

# **AEOLIAN DUST: IMPLICATIONS FOR AUSTRALIAN MINERAL EXPLORATION & ENVIRONMENTAL MANAGEMENT**

**Australian National University  
SYMPOSIUM: 25-26 November 1998**

## **PROGRAM**

### **Wednesday, 25<sup>th</sup> November**

Seminar Room, Room 235, Botany and Zoology Building (Gould Wing)

- 8:00-9:00                    REGISTRATION - Seminar Room
- 9:00-9:10                    OPENING: Colin Pain
- 9:10-9:20                    INTRODUCTION TO SYMPOSIUM: Richard Greene

### **NATURE OF AEOLIAN DUST**

Chairman:                    Paul Hesse

- 9:20-10:00                    Bob Wasson  
Australian Dust: sources and sinks
- 10:00-10:20                    Robyn D. Gatehouse and I.S. Williams  
Fingerprinting windblown dust by uranium-lead dating of aeolian zircon
- 10:20-10:40                    Xiu Ming Liu and P. Hesse  
Properties of magnetic mineralogy of Alaskan loess: evidence for  
pedogenesis
- 10:40-11:20                    *Morning Tea*

### **ENVIRONMENT IMPLICATIONS OF AEOLIAN DUST ACCESSIONS**

Chairman:                    Ian Acworth

- 11:20-11:50                    Ray Evans  
Salt and dust - A Quaternary climate-driven salt cycle for the eastern  
highlands?

- 11:50-12:10            John B. Field  
                              Aeolian events leading to accretion: evidence from soil formation studies on eastern Tablelands, NSW
- 12:10-12:30            Maurice Melis and I. Acworth  
                              Provenance of Cainozoic deposits and related dryland salinity, Upper Dicks Creek catchment, NSW
- 12:30-12:50            John Leys, S. Heidenreich, G. McTainsh and F. Larney  
                              Changes in the erodibility of a surface as indicated by threshold wind velocities using a piezo-electric crystal sensor
- 12:50-1:50              *Lunch – Geography Department*
- 2:00 Sharp              Buses depart from the front of the BoZo Building (Daley Road) for the field trip to Sutton, Gundaroo, Dicks Creek and Yass, returning to Gundaroo Pub for the Symposium Dinner
- 7:00-10:00              *Symposium Dinner at Gundaroo Pub*
- 10:00                    Leave Gundaroo Pub for return trip to Canberra by bus

## **Thursday, 26<sup>th</sup> November**

Seminar Room Botany and Zoology Building (Gould Wing)

### **ROLE OF AEOLIAN DUST IN SOIL LANDSCAPE PROCESSES**

Chairman: Brad Pillans

- 9:00-9:30 Xiang Yang Chen  
Aeolian dust deposits and soil landscapes: examples from Wagga Wagga, NSW
- 9:30-9:40 Fletcher Townsend and P. Hesse  
Aeolian additions to the soils of the Central Highland and NW plains of NSW: characterization and impacts
- 9:40-9:50 Paul Hesse, F. Townsend, G. Humphreys and S. Kamper  
Dust accession rates over the Late Pleistocene in northern NSW; the potential for the formation of aeolian mantles and reworking within the landscape
- 9:50- 10:10 Bernie Joyce  
Aeolian dust in the Western Victorian landscape
- 10:10-10:40 Presentation by Poster Authors (5 minutes each)  
See appendix for list of titles
- 10:40-11:10 *Morning Tea*
- Chairman: X.Y. Chen
- 11:10-11:30 Stuart Johnston  
The influence of aeolian dust deposits on alpine soils in south-east Australia
- 11:30-11:50 Brad Pillans  
Mid Pleistocene arid shift in southern Australia, dated by magnetostratigraphy
- 11:50-12:10 Paul Hesse  
Quaternary dust flux and dust size records from Tasman Sea sediment records
- 12:10-1:00 *Lunch – Geography Department*

## IMPLICATIONS OF AEOLIAN DUST FOR MINERAL EXPLORATION

Chairman: Colin Pain

1:00-1:20 Keith Scott  
Regolith effects and gold exploration in the Blayney-Orange District, NSW

1:20- 1:40 Bruce Dickson  
Locating aeolian soils with aerial gamma-ray surveys

1:40-2:00 David Garnett  
Mineral exploration in southern Africa – the challenge of wind-blown sands

2:00-2:30 *Afternoon Tea*

## DISCUSSION AND SUMMARIES

Chairman: Richard Greene

2:30-3:20 General Discussion and Summaries  
Bob Wasson and David Garnett

3:20 FINISH

## APPENDIX

### POSTERS

Clare McIntosh, J. Field, D. Tilley and C. L. Moore

Aeolian contribution to soils in the Boorowa Region

Tan Kok Piang, X.Y. Chen and K.G. McQueen

Aeolian component in soil profiles at the McKinnons Gold Deposit area,  
Cobar, New South Wales

Brian Murphy, J. Lawrie, D. King and C. Taylor

Distribution of sodic soils in central western NSW

Stephan Heidenreich, J. Leys, F. Larney and G. McTainsh

Remote high-resolution measurements of wind erosion with a piezo-electric  
crystal sensor

Bernie Joyce, B. Johns and D. Lulofs

Aeolian dust in the Broken Hill landscape: rates of geochemical dispersion  
and implications for mineral exploration

Mal Sheard and M. J. Lintern

Pedogenically modified aeolian carbonate dust (calcrete mantle): an excellent  
exploration sampling medium - a case study from the Birthday gold  
Prospect, Gawler Craton, South Australia