



第31回 生命科学セミナー

(兼：中央大学訪問研究者セミナー)

Carboniferous wildfire revisited

石炭紀の自然火災現場再訪

英語による講演です!

Prof. Dr. Andrew C. Scott

(Royal Holloway University of London, UK)

アンドリュー・C・スコット卓越教授
(英国ロイヤルホロウェイ大学、ロンドン)
(西田研：訪問研究者)

日時：2022年11月19日(土) 15:00-17:00

@ 6418(6号館4階)

Abstract

The nature and occurrence of fossil charcoal (also called fusain) in sediments and coals (often identified as inertinite/fusinite/semi-fusinite) is the main way that the history of Carboniferous landscape fire has been studied. Fires have been shown to have been common in many Carboniferous ecosystems worldwide yet we still have little understanding of the detail of what, where and how such fires occur or indeed their effects both on the local ecosystem as well as on the Earth System as a whole. Research has demonstrated that detailed scanning electron microscope studies of charcoal residues can provide data on the plants that have been burned by wildfires.

A study of charcoaled vegetation from fine-grained clastic sediments from Swillington Brickworks, Yorkshire recovered from bulk maceration of the sediment, that was not evident from bedding surface examination, has demonstrated that some levels contain abundant leaf charcoal, mainly from pteridosperms, in addition to wood charcoal derived from a range of gymnosperms. The charcoaled plants are interpreted as wildfire residues mainly from surface fires that have been transported and deposited on low-lying floodplains.

Information on the amount of charcoal in coal globally appears to relate to atmospheric oxygen composition and this shows that throughout the Carboniferous oxygen levels were as high or higher than those of the present day, suggesting that wildfires were more frequent. Interpreting the frequency of fires in different ecosystems remains fraught with difficulty and calculations within peat (coal) systems are at an early stage. The impact of fire on vegetational change as well as the relationship between fire and climate in the Carboniferous remains little studied. New data on some Pennsylvanian charcoal deposits from the British Isles is integrated into previous studies to provide an indication of our current understanding of the role of fire on land and also provide strategies for obtaining new information in the future.

Andrew Scott 教授は地質・古生物学が専門で、特に地質時代の森林火災の専門家として著名です。多数ある著書の一冊 *Burning Planet: The Story of Fire Through Time* は近く邦訳が出版されます。地層にある化石層には火災により炭化した植物片がよく含まれており、過去の生態系における火災の役割や環境を推定することができます。温暖化により頻度が増加している現在の自然火災を科学的に捉える素材にもなります。本講演では、古生代石炭紀の火災について、最新技術を用いた新たな解析結果を加え、お話しします。

問合せ先：西田治文(理工学部生命科学科 03-3817-7193, [helecho @ oio.chuo-u.ac.jp](mailto:helecho@oio.chuo-u.ac.jp))