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SARAH J. FOWELL

Curriculum Vita

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Dear Alfred,
Here are the copies of my CV and NSF proposal, as promised in my e-mail.
Best to you + Betty.
Sarah

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Education:

9/87-1/94 Columbia University
M.A. Geology, February, 1990
M.Phil. Geology, October, 1991
Ph.D. Geology, February, 1994
thesis: Palynology of Triassic/Jurassic Boundary Sections from the Newark Supergroup of Eastern North America: Implications for Catastrophic Extinction Scenarios
supervisor: Dr. P.E. Olsen

9/83-5/87 University of Wisconsin-Madison
B.S. Geology, May, 1987

Experience:

1/94-present Research Associate, The University of South Carolina
Reconstructing Siberian paleoclimates using palynofloras from long cores of Lake Baikal
Co-instructor of an undergraduate seminar on lacustrine environments

7/94-present Adjunct Associate Research Scientist, Lamont-Doherty Earth Observatory
Writing proposals for studies of Triassic palynofloral diversity and its relationship to paleolatitude and paleoclimate

9/94 Visiting Instructor, The Pennsylvania State University
Teaching classroom and laboratory sections on paleopalynology

9/87-1/94 Graduate Fellow, Columbia University
Research Assistant: Palynology, biostratigraphy, sedimentology
Teaching Assistant: Introductory geology, biostratigraphy

9/88-12/88 Visiting Student, The Pennsylvania State University
Processing of modern and fossil pollen, paleopalynology, plant anatomy

9/86-5/87 Geology Museum Tour Guide, University of Wisconsin-Madison
Designing exhibits, guiding tours for student groups

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Field Experience:

1994: Comparing pollen assemblages from long cores of Lake Baikal with the local Siberian flora, supervising undergraduate students in the collection of water and sediment samples from Lake Baikal, Russia

1988-1993: Mapping, correlation, and palynological sampling of Newark Supergroup outcrops; sampling and description of Newark basin cores

1993: Description and measurement of stratigraphic units, collection of palynological samples, Argana basin, Morocco

1992: Collection of short cores from Brown's pond, VA, for palynological analysis

1991: Collection of palynological and paleomagnetic data, Trinity Peninsula, Antarctica

1987: Mapping sedimentary, metamorphic, and igneous rocks in the Wasatch and Uinta mountains of Utah

Research Grants:

NSF Grant EAR 9418464, 1995 - 1997: A two-year study of Triassic paleolatitudinal diversity gradients
Paleontological Society Student Research Grant, 1989

Awards:

2nd Place Best Poster, GSA Annual Meeting, 1992
AASP-NSF Travel Grant, 1992
Langer Prize (Lamont-Doherty Earth Observatory), 1990
Best Oral Presentation of Research by a Student (GSA, NE Section Meeting), 1989
UW-Madison Geology Department Outstanding Junior (scholarship), 1986
National Merit Scholar, 1983

Societies:

American Association of Stratigraphic Palynologists
American Geophysical Union
Geological Society of America
Paleontological Society
Sigma Xi
Phi Beta Kappa

Articles:

Fowell, S.J., and Traverse, A., in press. Late Triassic palynology of the Fundy basin, Nova Scotia and New Brunswick. Review of Palaeobotany and Palynology.

Fowell, S.J., Cornet, B., and Olsen, P.E., 1994. Geologically rapid Late Triassic extinctions: Palynological evidence from the Newark Supergroup. In: Klein, G. D., ed., Pangea: Paleoclimate, Tectonics and Sedimentation During Accretion, Zenith and Break-up of a Supercontinent. Geological Society of America Special Paper 288, pp. 197-206.

Fowell, S.J., and Olsen, P.E., 1993. Time-calibration of Triassic/Jurassic microfloral turnover, eastern North America. Tectonopysics 222: 361-369.

Olsen, P.E., Fowell, S.J., and Cornet, B., 1990. The Triassic/Jurassic boundary in continental rocks of eastern North America; A progress report. In: Sharpton, V. L., and Ward, P. D., eds., Global Catastrophes in Earth History. Geological Society of America Special Paper 247, pp. 585-593.

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Manuscripts In Preparation:

Fowell, S. J., Bezrukova, Y., and Markgraf, V., in prep. Pleistocene vegetation and climate of Siberia, from long cores of Lake Baikal. For Geology.

Williams et al., in prep. Preliminary results of the first drilling on Lake Baikal, Buguldeika site, southeastern Siberia. For Quaternary International.

Selected Abstracts:

Bezrukova, E. V., and Fowell, S. J., 1994. Late Pleistocene vegetation and climate of southern Siberia, from a 98 meter core of lake Baikal. Geological Society of America, Abstracts with Programs, 26: A64.

Fowell, S.J., 1993. Evidence for regional palynofloral extinctions at the Triassic/Jurassic boundary. Annual Convention, Canadian Society of Petroleum Geologists with Global Sedimentary Geology Program, Program and Abstracts: 99.

Fowell, S.J., 1992. Rare palynofloras from the Fundy basin: Implications for a regional Triassic/Jurassic boundary event. Geological Society of America, Abstracts with Programs, 24: A95-A96.

Fowell, S.J., Cornet, B., and Olsen, P.E., 1992. Palynomorph assemblages from cyclic sedimentary sequences of Late Triassic age. 8th International Palynological Congress, Program and Abstracts: 48.

Fowell, S.J., 1990. Palynological evidence for a Triassic/Jurassic boundary event, Newark Supergroup. Geological Society of America, Abstracts with Programs, 22: A355.

Fowell, S.J., 1989. Quantitative palynostratigraphy of the Newark Supergroup. Geological Society of America Northeastern Section, Abstracts with Programs, 21: 15.

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The Project Summary should include a statement of objectives, methods to be employed, and the significance of the proposed activity to the advancement of knowledge or education. Avoid use of first person to complete this summary. **DO NOT EXCEED ONE PAGE.** (Some Programs may impose more stringent limits.)

PROJECT SUMMARY

Climatic extremes have been suggested as the cause of high extinction rates among Late Triassic organisms, but the impact of warm global temperatures and climate change on the diversity of these fossil groups has not been examined in detail. Analysis of palynofloral data from continuous cores and correlative outcrops of the Triassic Newark Supergroup is proposed in order to separate the effects of paleolatitude, precipitation gradients, and evolutionary changes on palynofloral composition. The magnetic reversal stratigraphy and cyclostratigraphy of Newark basin cores provides a framework of rigorous temporal and geographic control for the Newark Supergroup and permits high-resolution correlation between separate but tectonically similar basins. Collection and comparison of coeval palynofloras from four time slices in cores of the Newark and Taylorsville basins and outcrops of the Culpeper and Fundy basins is planned in order to reconstruct Late Triassic palynofloral diversity gradients across 7° of paleolatitude from an equatorial humid belt to a sub-equatorial arid zone. Species counts from these assemblages will be used to delineate Triassic vegetational communities, while similarity coefficients and polar ordination will be employed to determine how these communities changed over time and paleolatitude. Isolation of the climatic/geographic and temporal aspects of floral composition and diversity will permit evaluation of the various climate-driven extinction scenarios and provide a useful test of Triassic climate models.

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*Proposers may select any numbering mechanism for the proposal.

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RESULTS OF PRIOR NSF SUPPORT

Sarah J. Fowell: NO PRIOR SUPPORT

Paul E. Olsen:

Grant: BSR 87-17707 P. I.: Paul E. Olsen
Title: Early Mesozoic Continental Tetrapod Diversification and Extinction in Eastern North America
Period: 3/1/88-3/31/90 Amount: $135,272

This project examined biotic diversification and extinction in the Triassic and Jurassic Newark Supergroup of Eastern North America. Special attention was paid to the two reported episodes of mass extinctions: the Carnian-Norian event and the Triassic-Jurassic boundary. Specimens were collected from three independent taphofacies: 1) fluvial-terrestrial; 2) lake-margin; and 3) deep lake. By tying specimens to the lake level cycles of Milankovitch origin characteristic of the Newark Supergroup, the pattern of faunal change can be examined at the 20,000 year level of resolution over 30 million years of the Early Mesozoic. Using this methodology the Carnian-Norian event apparently is smeared out over millions of years, perhaps not standing out above background levels of extinctions, while the Triassic-Jurassic boundary was abrupt and of very large magnitude. Several major new tetrapod localities were found during the process. The grant provided partial support for Ph.D. work of R. Schlische and S. Fowell.

Major Publication Citations:

Fowell, S. J., and Olsen, P. E., 1993. Time-calibration of Triassic/Jurassic palynofloral turnover, eastern North America. Tectonophysics, 222: 361-369.

Olsen, P. E. and McCune, A. R., 1991, Morphology of the Semionotus elegans species group from the Early Jurassic part of the Newark Supergroup of Eastern North America with comments on the family Semionotidae (Neopterygii). Jour. Vert. Paleo. 11(3), 269-292.

Olsen, P. E. and Schlische, R. W., 1990, Transtensional arm of the early Mesozoic Fundy rift basin: penecontemporaneous faulting and sedimentation. Geology, 18, 695-698.

Sues, H.-D. and Olsen, P. E., 1990, Triassic vertebrates of Gondwana aspect from the Richmond basin of Virginia. Science, 249, 1020-1023.

Grant: EAR-87-21142 P. I.: Dennis V. Kent and Paul E. Olsen
Title: Paleomagnetism of the Newark Supergroup and the Mesozoic APWP for North America
Period: 4/1/88-11/30/90 Amount: $150,002

The principle objective of this project was to document the apparent polar wander (APW) for the North America over the Mesozoic. We concentrated on the Newark basin which contains more than 6000 m of cyclical lacustrine and fluvial sediments spanning about 30 my of continuous deposition over the Late Triassic to Early Jurassic. A high unblocking temperature characteristic magnetization was isolated by complete thermal demagnetization, the reliability of the results supported by a basin-wide correlation of magnetic stratigraphy and a positive fold test. Newark paleopoles from different stratigraphic intervals are very similar indicating very slow drift during this interval. An important and pervasive overprint magnetization was also found and may be associated with a previously documented hydrothermal event at about 175 Ma. The high latitude pole for the overprint is supported by results from the middle Jurassic Moat Volcanics in the White Mountains of New Hampshire. The grant provided partial support for Ph.D. work of R. Schlische, M. Van Fossen, and W.K. Witte.

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Major Publication Citations:

Kent, D. V. and Witte, W. K., 1993, Slow apparent polar wander for North America in the Late Triassic and large Colorado Plateau rotation. Tectonics, 12, 291-300.

Van Fossen, M. C. and Kent, D. V., 1990, High-latitude paleomagnetic poles from Middle Jurassic plutons and Moat Volcanics in New England and the controversy regarding Jurassic apparent polar wander for North America. Jour. Geophys. Res., 97, 1803-1805.

Witte, W. K., Kent, D. V., 1989, A Late Carnian-Early Norian (~225 Ma) paleopole from the sediments of the Newark Basin. Geol. Soc. Amer. Bull., 101, 1118-1126.

Witte, W. K., Kent, D. V., 1990, The paleomagnetism of redbeds and basalts of the Hettangian extrusive zone, Newark Basin, New Jersey. Jour. Geophys. Res., 95, 17,533-17,546.

Witte, W. K., Kent, D. V., and Olsen, P. E. , 1991, Magnetostratigraphy and paleomagnetic poles from Late Triassic-earliest Jurassic strata of the Newark basin: Geol. Soc. Amer. Bull., 103, 1648-1662.

Grant:	EAR-89-16726	P. I.:	Paul E. Olsen and Dennis V. Kent
Title:	30 Million Year Record of the Evolution of a Continental Rift: The Early Mesozoic Newark Basin		
Period:	6/1/90-11/30/94	Amount:	$2,100,000

Over 6860 m of continuous core has been recovered from the early Mesozoic Newark rift basin. The cores were recovered at seven coring sites, using an offset drilling method; they span the fluvial Stockton Formation, all of the lacustrine Lockatong and Passaic Formations, the Orange Mountain Basalt, and virtually all of the lacustrine Feltville Formation. The nearly 15% overlap zones between adjacent cores are used to scale them to one another and combine them in a composite section of the basin covering about 5,200 m of relative section. Evolutive time-frequency analysis of the composite section shows that a full spectrum of predicted Milankovitch cycles expressed as lake level cycles is present including the approximately 20,000, 100,000, 400,000 and 2,000,000 year cycles. An apparent small deviation in the period of the ~2,000,000 year cycle has been detected due to unpredictable variation in the orbits of Mars and the Earth. A complete geomagnetic polarity record spanning 30 my has also been recovered from the cores. It is tied to the cyclostratigraphy and allows the development of a high resolution geomagnetic reversal time scale at the 20,000 year level of resolution. The grant provided partial support for Ph.D. work of S. Fowell, D. Reynolds, and A.J. Johansson.

Major Publication Citations:

Olsen, P. E., Kent, D V., Cornet, B., Witte, W. K., and Schlische, R. W., submitted, Stratigraphy of the Newark rift basin (Early Mesozoic, Eastern North America): Results of the Newark basin coring project: Geological Society of America.

Olsen, P. E., and Kent, D., 1990, Continental Coring of the Newark Rift: EOS, Transactions of the American Geophysical Union, 71, 385, 394.

Olsen, P. E., Kent, D. V., Witte, W. K., Fowell, S. J., and Cornet, B., in prep. Milankovitch climatic forcing in the Late Triassic Newark basin, based on continuous cores. For Earth Planet. Sci. Letters.

Schlische, R. W., and Olsen, P. E., 1990, Quantitative filling models for continental extensional basins with applications to the early Mesozoic rifts of eastern North America: Journal of Geology, 98, 135-155.

Kent, D. V., Witte, W. K., Olsen, P. E., Fowell, S. J., in prep. Late Triassic geomagnetic reference sequence from the Newark continental rift basin. For Jour. Geophys. Res.

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INTRODUCTION

The Late Triassic was an interval of high extinction rates and climatic extremes rare in the history of the Earth. Unusually warm global temperatures are indicated by the lack of sea ice in the Triassic ocean (Frakes and Francis, 1988) and coal deposits in the northern polar regions of the Pangaean supercontinent (Cornet and Olsen, 1985). Despite the apparent low pole to equator thermal gradient, climate models of Pangaea provide evidence of enhanced continentality, with large seasonal temperature differences in the continental interiors (Kutzbach and Gallimore, 1989; Crowley et al., 1992). Environmental sensitivity of Pangaean organisms adapted to extreme seasonal variations coupled with rapid climate changes has been postulated as a possible driving mechanism for the Late Triassic mass extinction (Crowley and North, 1988; Crowley et al., 1989). This event lead to a 23% decrease in diversity of marine invertebrate families (Sepkoski, 1984) and a 49% extinction of non-marine tetrapod families (Olsen et al., 1987) during the Late Triassic. In the Newark Supergroup of eastern North America (Fig. 1), terrestrial vertebrate extinctions are correlative with a 60% reduction in palynofloral diversity across the Triassic/Jurassic boundary (Olsen et al., 1990; Fowell, 1992a; Fowell et al., in press; Fowell, 1994).

Variation of modern plant associations according to latitude, elevation, precipitation, and temperature has been studied for decades (e.g., Holdridge, 1947; Walter, 1973; Whittaker, 1975). Although critical to the understanding of but little is known about the paleoclimatic significance of extinct Triassic floras. We propose an analysis of the relationship between paleolatitude, climate, and palynofloral composition during four Late Triassic time slices. Palynomorphs will be collected from four separate but tectonically similar basins of the Newark Supergroup (Fig. 1). By examining palynomorph assemblages from closely correlated stratigraphic sections that span 7° of latitude from an equatorial humid belt to a sub-equatorial arid belt (Fig. 1), we will be able to determine the effects of precipitation and latitude on pollen and spore diversity, provide a reconstruction of coeval palynofloras along a paleolatitudinal gradient, and test the viability of climatically-driven extinction scenarios.

The database for this analysis consists of outcrops and cores from the Fundy, Newark, Culpeper, and Taylorsville basins of the Late Triassic Newark Supergroup (Fig. 1). More than 6000 meters of lacustrine sediment were recovered from the Newark basin (Fig. 2) during 1990-1993. Studies of this 25 my record of climate change indicate that the entire spectrum of Milankovitch cyclicity is represented in these sediments by a hierarchy (20 ky, 100 ky, 400 ky) of lake level variations (Olsen and Kent, 1990; Olsen et al., in prep.). The driving mechanism for these lake level cycles is orbitally controlled precipitation patterns in the equatorial belt of Pangaea (Olsen, 1986; Witte et al., 1991; Crowley et al., 1992). These climatic cycles have been placed within the framework of a detailed paleomagnetic reversal stratigraphy which provides a method for regional and eventual global correlation (Kent et al., 1992; Olsen et al., submitted). Moreover, the paleomagnetic data provide an estimate of the paleolatitudes for North America.

During the Late Triassic, North America drifted northward. In the Late Carnian, the Newark basin was located at about 3° north paleolatitude and the Taylorsville basin straddled the equator (Fig. 3). By the end of the Triassic, 23 my later, North America had drifted 7° northward and the Taylorsville basin had crossed the equator (Witte et al., 1991; Kent et al., in prep.). Although the Taylorsville and Newark basins are separated by hundreds of kilometers, current age constraints indicate stratigraphic overlap between upper Taylorsville and basal Newark basin strata (Cornet, 1993). Thus the Taylorsville basin is correlative with the Newark, extending the sedimentary and palynological records southward in geography and backward in time. Differences in Triassic floral composition and diversity resulting from both the 3° of latitude between the Newark and Taylorsville basins and the northward drift of the Pangaean continent can be assessed by comparing palynofloras from the overlapping basin sections.

Over 6000 meters of continuous core from the Taylorsville basin have been recently donated to the LDEO by Texaco Inc. The magnetostratigraphic and cyclostratigraphic records of these cores are currently being compiled by P.E. Olsen and D.V. Kent of LDEO. These records will permit high resolution correlation of individual 20 ky cycles between the Taylorsville and Newark basins, while the paleomagnetic data allow detailed reconstruction of changing paleolatitudes.

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Consequently, palynological data from the Newark and Taylorsville cores can be placed within a rigorous temporal and paleogeographic framework that permits testing of specific aspects of the climate/floral interaction.

Lithostratigraphic correlations between the Newark basin sedimentary record and outcrops of the Culpeper basin (Olsen et al., 1989) are presently being tested and refined by the paleomagnetic work of D. V. Kent. It is anticipated that this data will cement stratigraphic correlations with both the Newark and Taylorsville basins at the 20 ky level of resolution. If correlations with the Fundy basin at the northern end of the Newark Supergroup can be established with equal precision, paleopalynological reconstructions can be extended over an additional 4.5° of paleolatitude. To this end, we herein propose collection of a paleomagnetic samples from key outcrops of the Fundy basin. For the cost of travel to Nova Scotia, D. V. Kent has agreed to supervise collection, processing, and analysis of these samples at the LDEO paleomagnetic laboratory, as part of a currently funded NSF project (ATM-93-17227) designed for that purpose.

The proposed palynological analyses will address two essential aspects of the relationship between palynofloral diversity and climate change as recorded by the Newark Supergroup cores and outcrops. 1) Palynofloral composition and diversity throughout the record of each individual basin will be placed in the context of known changes in paleolatitude. 2) Palynofloras from coeval 20 ky cycles at four different horizons in the separate basins will be compared as an additional test of the effects of precipitation gradients and changing paleolatitude. Comparison of these two studies will permit separation of the effects of latitudinal climate gradients and temporal changes in assemblage composition and allow reconstruction of Late Triassic paleolatitudinal diversity gradients at a high level of temporal and geographic resolution.

BACKGROUND

Late Triassic Extinctions: The Late Triassic mass extinction event represents one of the five most severe mass-dyings of marine and continental animals in Phanerozoic history (Sepkoski, 1984; Olsen et al., 1987). Worldwide extinctions of numerous terrestrial plant species have, in contrast, not been documented across this boundary. Plants are capable of dormancy and regeneration, and the consequences of disruptions that cause faunal mass extinctions must be sought in more subtle floral disruptions. For example, studies of Cretaceous/Tertiary boundary palynofloras have shown that the Iridium anomaly correlates with a temporary, though widespread, spike in the spore/pollen ratio (Tschudy et al., 1984; Tschudy and Tschudy, 1986; Nichols et al., 1986; Fleming, 1990). This brief replacement of Late Cretaceous angiosperms by spore-producing ferns is correlated with a small increase in extinction rates among palynomorph species and interpreted as a recolonization following catastrophic destruction of the Cretaceous flora (Tschudy et al., 1984; Tschudy and Tschudy, 1986). Although the Cretaceous/Tertiary mass extinction has thus left an identifiable signal in the palynofloral record, it is neither so permanent nor so dramatic as the disappearance of dinosaurs and marine invertebrates.

Palynofloras from Triassic/Jurassic boundary sections provide evidence of synchronous, regional extinctions. In the marine Triassic sections of Europe, a suite of palynomorph species characteristic of the latest Triassic (Rhaetian) disappear at the Triassic/Jurassic boundary (Visscher and Brugman, 1981). Detailed palynostratigraphic analyses of terrestrial outcrops from the Newark Supergroup reveal a geologically rapid, 60% regional extinction of common Late Triassic species and a coincident spike in the spore/pollen ratio (Figs. 4, 5) (Fowell, 1992a; Fowell and Olsen, 1993; Fowell et al., in press; Fowell, 1994).

Evidence for high extinction rates among diverse groups of Triassic organisms has lead to disagreement over the relative timing of the terrestrial and marine extinction events and debate regarding the causal mechanism behind these extinctions. Multiple extinctions throughout the Carnian and Norian have been proposed for both terrestrial tetrapods (Benton, 1986) and marine invertebrates (Benton, 1986; Johnson and Simms, 1989). Hallam (1990) and Olsen et al. (1987) present evidence that the marine and terrestrial extinctions were confined to the latest Triassic, but they disagree as to the mechanism. Rapid sea-level fluctuation is favored by Hallam (1990), whereas bolide impact scenarios are put forward by Olsen et al. (1987). The impact hypothesis is

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supported by the identification of shocked mineral grains and coincident bivalve extinctions in the Late Triassic of Italy (Bice et al., 1992).

Extremities of the Late Triassic climate have been called upon to explain both gradualistic and catastrophic extinction scenarios. Simms and Ruffell (1992) cite a Carnian humid phase as the probable cause for Early Carnian and Carnian/Norian extinctions. Weems (1992) argues for a gradual decline of terrestrial vertebrate diversity throughout the Late Triassic and Early Jurassic and suggests that these extinctions are related to increasing aridity of the Triassic climate. Crowley and North (1988) also suggest that a peak in Late Triassic aridity and evaporite deposition might be linked to extinction, but these authors envision an abrupt event triggered by instabilities related to changes in ocean salinity.

Tests of climate-driven extinction scenarios are complicated by the dearth of information on the response of Triassic floral assemblages to changes in temperature and precipitation. Cores of terrestrial deposits from the Newark basin (Figs. 1, 2) contain a unique record of Late Triassic climate unequaled in quality and continuity. The detailed cyclostratigraphy and magnetostratigraphy compiled from these sediments (Olsen et al., submitted) facilitates high-resolution correlations with other Newark Supergroup basins. Proposed collection of palynological samples from four coeval time slices in the Late Triassic Fundy, Newark, Culpeper, and Taylorsville basins will test the validity of climate-driven extinction models by providing the first detailed reconstruction of low latitude Triassic floral provinces along a humid-to-arid climate gradient (Fig. 1) that spans 7° of paleolatitude.

Newark Coring Project: The Newark basin coring project was initiated in 1991 to continuously core the entire Triassic portion of the Newark continental rift (Figs. 2, 4), so that a complete cyclostratigraphy and magnetostratigraphy could be produced for the Late Triassic (Olsen and Kent, 1990). The Jurassic part of the section had already been cored by the Army Corps of Engineers (ACE) (Fedosh and Smoot, 1988; Kent et al., 1992). The Newark basin continental coring project during 1990-1993 recovered about 6890 m of continuous core (recovery greater than 99%). The cores come from seven sites in New Jersey and span about 29 million years of the Late Triassic and Early Jurassic. An offset drilling technique was used to take advantage of the eroded half graben geometry of the basin (Fig. 2) with stratigraphically adjacent core holes having about 15% overlap. The younger 6553 m of core consists almost entirely of cyclical lacustrine strata, comprising the longest record of equatorial climate from a continental environment of any age.

Cycle Stratigraphy and Correlation: Perhaps the most striking aspect of the Newark basin cores is the remarkably regular and consistent cyclicity present throughout all but the igneous and the lower fluvial intervals (Orange Mountain Basalt and Stockton Formation, Fig. 2) spanning 25 my of the Late Triassic. Thirty years of research on outcrops has strongly corroborated Van Houten's original analysis (Olsen, 1984, 1986; Crowley et al., 1992; Kominz and Bond, 1990) that the full spectrum of precession-related, Milankovitch-type cycles predicted by celestial mechanics (Berger, 1977; Berger et al., 1989, 1992) are present, including the 20 ky, 100 ky, and 400 ky cycles. The 20 ky cycles have been named Van Houten cycles in honor of their discoverer (Olsen, 1986). A combination of cyclostratigraphy and magnetic polarity zones show that these cycles are traceable essential basin wide (Olsen et al., submitted). Although cycle calibration provides a high level of temporal control, the success of the proposed study does not rely on cycle periodicities. Palynofloral diversity can be studied in the laterally extensive, transgressive-regressive cycles from the Newark and Taylorsville cores without reference to Milankovitch theory. The cores constitute the largest, most complete record of continental climate change and paleolatitude for the Late Triassic that rivals the best records of the Cenozoic. The cyclostratigraphy of the Newark basin cores provides a continuous record of paleoclimate and a high resolution time scale for the Late Triassic, which, when combined with the geomagnetic reversal stratigraphy, permits high-resolution correlations throughout the Newark Supergroup. These cores will provide the temporal and paleogeographic control necessary to describe the latitudinal climate gradients of the Late Triassic and relate them to changes in palynofloral diversity.

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Late Triassic Palynology of the Newark Supergroup: Differences in composition and diversity of Newark Supergroup palynofloras allowed Cornet (1977) to recognize seven palynofloral zones. The Newark basin section spans five of these zones (Fig. 4), the Culpeper basin includes four zones, Fundy basin sediments cover all seven zones, and the Taylorsville basin strata are currently placed within the two oldest palynofloral zones (Cornet, 1977; Cornet and Olsen, 1985; Cornet, 1993). Age estimates of the basal Newark and upper Taylorsville sections indicate substantial temporal overlap between the two basins, but correlations based on palynological data have been complicated by the limited extent of Taylorsville basin outcrops and the differences in diversity between Newark and Taylorsville assemblages. Late Triassic palynofloras from the equatorial Taylorsville basin contain numerous species absent from higher-latitude, Newark basin floras (Cornet and Olsen, 1985). Thus there is evidence for a marked latitudinal diversity gradient, but high-resolution correlation (via cyclostratigraphy and magnetostratigraphy) and comparison of coeval palynofloras from the two basins are necessary in order to determine whether compositional differences are the result of temporal or geographic separation. This study has profound implications for the limits of palynology as an inter-latitudinal correlation tool and its utility as a sensitive index of paleoclimate.

Age-diagnostic species from Newark Supergroup palynofloras permit correlation with the Carnian and Norian of Europe (Cornet, 1977, 1993). Although the Newark Supergroup assemblages lack a suite of Rhaetian palynomorphs found in European type sections (Cornet, 1977; Fowell, 1992a; Fowell, 1994), comparison of the ranges of Late Triassic index species suggests that the Triassic/Jurassic boundary in the Newark Supergroup can be identified by the last appearance of *Patinasporites densus*, *Enzonalasporites vigens*, and *Ovalipollis pseudoalatus* (Fig. 4). We are currently concerned with cementing correlations between marine sections of Europe and terrestrial Newark Supergroup strata via paleomagnetic methods, but precise correlation with the European sections is not essential for success of the study of Late Triassic climate change and palynofloral diversity gradients proposed herein. It is sufficient to note that last appearances of Late Triassic index species in the Newark Supergroup are correlative with extinctions of tetrapods, last appearances of ichnofossil genera, and a geologically rapid decrease in palynofloral diversity that follows approximately 25 my of relative stability (Fig. 4) (Olsen et al., 1987; Silvestri, 1991; Silvestri and Szajna, 1993; Fowell et al., in press). The terrestrial Triassic/Jurassic boundary is identified by this peak in biotic turnover.

A 60% regional extinction of common palynomorph species (Fig. 4) (Fowell, 1992a; Fowell and Olsen, 1993; Fowell et al., in press) is correlated with the Triassic/Jurassic boundary in the Newark Supergroup. Below the boundary, palynofloral assemblages contain a diverse array of monosaccate, bisaccate, and circumpolloid morphotypes in addition to Late Triassic index species (see above). Last appearances of these species are coincident with a decrease in the diversity and abundance of monosaccate and bisaccate morphotypes. Above the boundary, Early Jurassic assemblages are overwhelmingly dominated (65%-95%) by a single circumpolloid pollen genus, *Corollina* (Cornet, 1977; Fowell et al., in press).

High-resolution studies of Triassic/Jurassic boundary sections in the Newark basin appear to support a catastrophic Late Triassic palynofloral turnover (Fig. 5). Time-calibration of stratigraphic sections by Milankovitch cycles (Fig. 5) constrains the duration of the Late Triassic palynofloral turnover to an interval of less than 20 ky (Fowell, 1989; Fowell, 1990; Olsen et al., 1990; Fowell and Olsen, 1993). Rapid floral change is also indicated by spore-dominated assemblages (C1, EVD, 6-4, and 6-5 in Fig. 5) recovered from strata that overlie the last diverse, Late Triassic palynofloras and underlie the first appearance of Early Jurassic assemblages. Analogy with Cretaceous/Tertiary boundary fern spikes (Tschudy et al., 1984; Tschudy and Tschudy, 1986; Nichols et al., 1986; Fleming, 1990) suggests that the spore-dominated floras may represent an opportunistic radiation of ferns following the catastrophic destruction of the Late Triassic flora. The brevity of the palynofloral turnover, in conjunction with the spore-dominated horizons, has been interpreted as supporting bolide impact scenarios for Triassic/Jurassic boundary extinctions (Olsen et al., 1990; Fowell and Olsen, 1993).

Additional support for an abrupt boundary event has been found among palynofloras from the Triassic/Jurassic boundary of the Fundy basin (Fig. 1) (Fowell, 1992b; Fowell and Traverse,

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submitted). In Fundy sections, the last appearance of the Late Triassic index species *Patinasporites densus* is accompanied by a substantial drop in morphological diversity. These data suggest that the Newark basin palynofloral turnover was regional in extent, spanning at least 5° of latitude. But the low diversity of Fundy assemblages relative to contemporaneous Newark palynofloras renders comparison between these two basins problematic. A controlled study of the effects of paleolatitude on Late Triassic floral diversity is needed to determine whether the low diversity of the Fundy samples is an artifact of higher paleolatitude and drier climate or the result of gradually decreasing diversity throughout the Late Triassic.

The case for a catastrophic Late Triassic extinction is by no means conclusive; evidence of increasing lake depth found in the structures and fabrics of the uppermost Triassic sediments of the Culpeper, Newark, and Fundy basins suggests that rapid climate change may be an equally viable explanation for the terminal Triassic biotic turnover. To date, this theory has proven difficult to test. Because so little is known regarding the climatic parameters necessary to sustain the various Triassic palynofloral assemblages, predictions as to the floral response to an increase in precipitation cannot easily be made. Analysis of palynofloras assemblages throughout 100 and 400 ky cycles in the Richmond basin (Fowell, 1994) indicates that sculptured spores and monosulcate pollen increase in abundance during humid intervals, whereas psilate spores and saccate pollen decrease (Fowell, 1994). This is consistent with the observed spike in sculptured spores and decrease in morphological diversity observed across the Triassic/Jurassic boundary in basins to the north. Unfortunately, the Richmond basin is entirely Carnian in age and contains only rare grains of *Corollina*, which dominates assemblages at the end of the Triassic. Hence the behavior of this genus cannot be predicted from the Richmond basin data alone.

In order to determine the climatic parameters favored by Norian and Rhaetian floras, it is necessary to compare assemblages from the deep-water portions of coeval cycles along a precipitation gradient. High-resolution temporal control and similarity of tectonic regimes between the Fundy, Culpeper, Newark and Taylorsville basins render stratigraphic sections from these basins the ideal laboratory in which to isolate the effects of latitude and precipitation on the Late Triassic palynofloras. Pending the expected verification of Fundy basins correlations via paleomagnetic sampling (see below), species counts of palynofloras from four time slices will produce a detailed reconstruction of palynofloral composition and diversity gradients which can be used to test theories of terminal Triassic, climate-driven extinctions.

PROPOSED WORK

We propose collection of palynological samples from four time slices (223 Ma, 215 Ma, 207 Ma, and the Triassic/Jurassic boundary at 201 Ma) in the Fundy, Newark, Culpeper, and Taylorsville basins. In the Newark basin, these horizons correspond to the basal Lockatong Formation, the Perkasie Member of the Passaic Formation, the Ukrainian Member of the Passaic Formation, and the uppermost Passaic Formation, respectively (Fig. 4) (Olsen et al., submitted). The basal Lockatong represents the onset of lacustrine sedimentation in the Newark basin, whereas the Perkasie and Ukrainian Members were deposited when the Newark basin lake was at a high-stand, during particularly "wet" phases of 400 ky cycles. The Triassic/Jurassic boundary lies several meters below the Jacksonwald basalt, near the top of the lacustrine Passaic Formation. These units were selected for this study because they have distinctive lithologies, each corresponds to a polarity reversal in the Newark basin magnetostratigraphic record (Fig. 4), and they have been shown to be palynologically productive (Cornet, 1977; Fowell et al., in press; Fowell, 1994).

Lithologic and palynologic correlations between the sedimentary record from the Newark basin cores and strata from the Taylorsville, Culpeper, and Fundy basins will be tested by paleomagnetics. Of particular significance to this proposal is the recent discovery that the Triassic/Jurassic boundary is close to a short reversed interval in Newark basin sections and cores (Kent, pers. comm.., 1994), providing a means of unambiguously verifying the position of the boundary throughout the entire Newark Supergroup. The magnetostratigraphy of the Taylorsville basin cores and Culpeper basin outcrops is currently being compiled by the LDEO paleomagnetic lab. The magnetic data is being collected as part of a funded project to extend the Newark basin

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climate record throughout the southern Newark Supergroup and backward in time via precise correlations between the Newark, Taylorsville, and Culpeper basins. Consequently, the high-resolution lithostratigraphic correlations necessary for the success of this proposal are nearly complete for these three basins. Preliminary results demonstrate that temporal correlation at the level of 20 ky cycles can be expected for Carnian and Norian strata of the Newark and Taylorsville basins. The existence of contemporaneous cycles between the Newark and Culpeper basins has been demonstrated at the outcrop level (Olsen, 1988; Olsen et al., 1989; Olsen et al., submitted), and correlation of individual 20 ky cycles is in progress. The ability to recognize coeval transgressive/regressive cycles in separate basins means that changes in relative rainfall were consistent throughout the Newark Supergroup. Hence the proposed comparison of palynomorph assemblages from correlative cycles constitutes a controlled experiment with regards to regional precipitation patterns.

Lithostratigraphic (Olsen at al., 1989), radiometric (Ratcliffe, 1988; Dunning and Hodych, 1990; Hodych and Dunning, 1992) and palynostratigraphic (Fowell, 1994; Fowell and Traverse, submitted) correlations between the Newark and Fundy basins have yet to be confirmed by paleomagnetic work. Inclusion of the Fundy basin in this project is essential, as it lay in an arid climate belt 4.5° north of the Newark basin and contains a sedimentary record of the entire Late Triassic. Well-preserved assemblages have already been recovered from the latest Triassic (Fowell, 1994; Fowell and Traverse, submitted), and diverse Carnian and Norian palynofloras have been extracted from strata in an exposed outlier of the Fundy basin (Traverse, pers. comm.., 1993). All that remains is to cement correlations between sediments in this outlier and Fundy basin strata via paleomagnetic data and to confirm the location of the Fundy basin Triassic/Jurassic boundary by sampling for the short reversed interval. We therefore propose collection of magnetic samples from each of the proposed four time slices in the Fundy basin.

As a result of the work of Cornet (1977) and Fowell (1994), slides of palynomorph assemblages from all four time intervals of the Newark basin and from the Triassic/Jurassic boundary of the Culpeper and Fundy basins are already available (Table 1). The Culpeper and Taylorsville basins together contain a record spanning the last 27 my of the Triassic, but the basin sections overlap for only a million years at approximately 215 Ma (see Fig. 3). Therefore, we propose collection of additional assemblages from three time-slices each in the Culpeper and Fundy basins (207 Ma, 215 Ma, and 223 Ma), and from two horizons in the Taylorsville cores (215 Ma and 223 Ma) (Table 1). We anticipate collection and processing of approximately 25 samples from each site, for a total of 200 palynomorph samples. Studies of the lateral variation between coeval palynomorph assemblages from outcrop and core samples of the Newark basin Ukrainian Member indicate that assemblage composition is relatively consistent throughout the basin for a given time slice (Fowell, 1994). Nevertheless, samples from the Fundy and Culpeper basins will be collected from multiple outcrops of the same unit whenever possible in order to test for local fluctuations in species composition and abundance.

The combination of detailed paleomagnetic data from the Newark Supergroup (Witte et al., 1991; Kent et al., 1992), high-resolution correlation of 20 ky cycles, and a suite of palynofloras spanning a total 7° of latitude during the Late Triassic will produce an unprecedented reconstruction of palynofloral diversity variations at separate time slices along a paleolatitudinal gradient (Fig. 3). The Triassic/Jurassic boundary is a time of particular biological interest, and will be represented by palynomorph assemblages from three of the four basins (Culpeper, Newark, and Fundy) included in this study. Because the basins drifted approximately 10° northward during Newark Supergroup sedimentation, the palynological record from each of the individual basins will provide a secondary test of the effects of changing paleolatitude on Late Triassic palynofloral diversity and allow separation of climatically- and evolutionarily-driven floral changes.

Schedule: High-resolution correlation of the Newark, Taylorsville, and Culpeper basins via cyclostratigraphy and magnetostratigraphy is currently being carried out by P. E. Olsen and D. V. Kent of LDEO. Much of this work will be completed by the start date of the proposed project. The bulk of the core and outcrop samples will be collected during the first year of the project, including the paleomagnetic samples from the Fundy basin. The Taylorsville basin cores are available at

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LDEO, so collection of additional samples (in the event of insufficient palynofossil recovery) can easily be accomplished during the first year. In the unlikely event that additional samples from the Culpeper or Fundy basins are required, this work would be carried out during the second year of the project. Laboratory processing, paleomagnetic analyses, palynomorph identification, and grain counting can proceed concurrently with the sample collection program during the first year of the project. It is estimated that processing of the 200 core and outcrop samples will alone require between four and six months of lab work. Hence it is our intention to accomplish most or all of the collection and processing during year one of the project, leaving ample time during year two for continued processing and analysis of the palynological data.

MATERIALS AND METHODS

Collection and Preparation: A sampling apparatus (drill press and core holder) at LDEO will be used to extract 1 cm diameter plugs from the Taylorsville basin cores. Recovery of spores and pollen from the rock will be accomplished by standard palynological processing techniques of HCl and HF digestion, centrifugation of the residue in ZnCl (specific gravity 2.1) to separate the organic fraction, and oxidation with HNO_3 (Traverse, 1988). Determination of absolute pollen abundance in samples from individual cycles will be made possible by the addition of a known quantity of a recent pollen species to the weighed sample prior to processing (Stockmarr, 1971). This method allows the abundance of individual taxa to be determined independently of the abundance of other taxa.

Systematics: Identification of pollen and spore taxa will be based on comparisons with extensive literature for Triassic and Jurassic palynomorphs and reference slide collections (curated by A. Traverse of Penn State University). However, it is already clear that some species recovered from Newark Supergroup strata are not described in the literature (Cornet, 1977; Cornet and Olsen, 1985; Fowell and Traverse, submitted), and we anticipate the identification of some new taxa.

Gradient Analysis: Whereas our principal goal is to determine the species richness and taxonomic composition of palynomorph assemblages along a paleolatitudinal and gradient, one of the most important elements of the proposed work is the selection of an appropriate measure of regional diversity trends. To that end, we will be using methods of ecological gradient analysis (Whittaker, 1975) to quantitatively express the degree of similarity between samples and to separate the effects of the latitude/moisture gradient from temporal (evolutionary) changes in assemblage composition.

The proposed sampling scheme lends itself particularly well to construction of a simple two-axis grid, with paleolatitude/precipitation on the ordinate and age on the abscissa, upon which the various palynofloral communities (or individual species) can be plotted to reveal evolutionary and climatic trends in composition (or diversity). The decision as to what determines a specific floral community is necessarily somewhat subjective, but it will be based on dominant species and overall taxonomic composition. This has proven an effective method for delineating modern vegetation associations (Whittaker, 1975; Walter, 1973), but Triassic assemblages have rarely been studied in sufficient detail as to allow recognition of distinct communities.

In addition to plots of changing diversity over time and latitude, quantitative measures of the similarity between individual samples can be used to construct a two-axis plot by polar ordination (see Whittaker, 1975). The similarity coefficients employed by this method (Coefficient of Community and Percentage Similarity) are based on species richness and abundances as determined from grain counts, and the position of each palynoflora on the grid is determined purely with respect to the other palynofloras. The advantage of this sort of plot is that no assumptions are made about the environmental (or temporal) trends responsible for changes in community composition. Axes are determined by gradients of change in the species composition of the samples, hence trends and their causes are inferred from the arrangement of the samples on the grid instead of being incorporated into its construction (Whittaker, 1975). Polar ordination will thus

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allow us to test for changes in the vegetation structure that are governed by factors other than precipitation, latitude, or evolution.

SUMMARY

The climate record and palynomorph fossils contained within cores from the Triassic Newark and Taylorsville basins and outcrops of the Culpeper and Fundy basins has the unique potential to clarify the relationship between palynofloral diversity, extinction, and climate gradients under warm-earth conditions. The proposed program of core sampling, counting of constituent palynomorphs, and application of quantitative similarity coefficients and gradient analysis will track the relationship between climate change and the diversity of fossil floras throughout Late Triassic time and test the plausibility of climate-driven mass extinction scenarios.

The comprehensive analyses of magnetostratigraphic and cyclostratigraphic data being carried out on the Newark Supergroup cores allows the palynological data to be placed within the boundaries of rigorous paleogeographic and temporal controls. Similarity of tectonic regime, elevation, and relative precipitation changes between the separate basins renders the Newark Supergroup an ideal laboratory in which to isolate the effects of latitudinal, climatic, and evolutionary changes on Late Triassic vegetation. Gradients of palynofloral composition and diversity that result from changing paleolatitudes can be assessed by comparing contemporaneous palynofloras from different latitudes and by observing changes within a single northward-drifting basin. Reconstruction of these gradients has not previously been attempted at such a high level of resolution, and the results will provide a useful test of Triassic climate models in both space and time.

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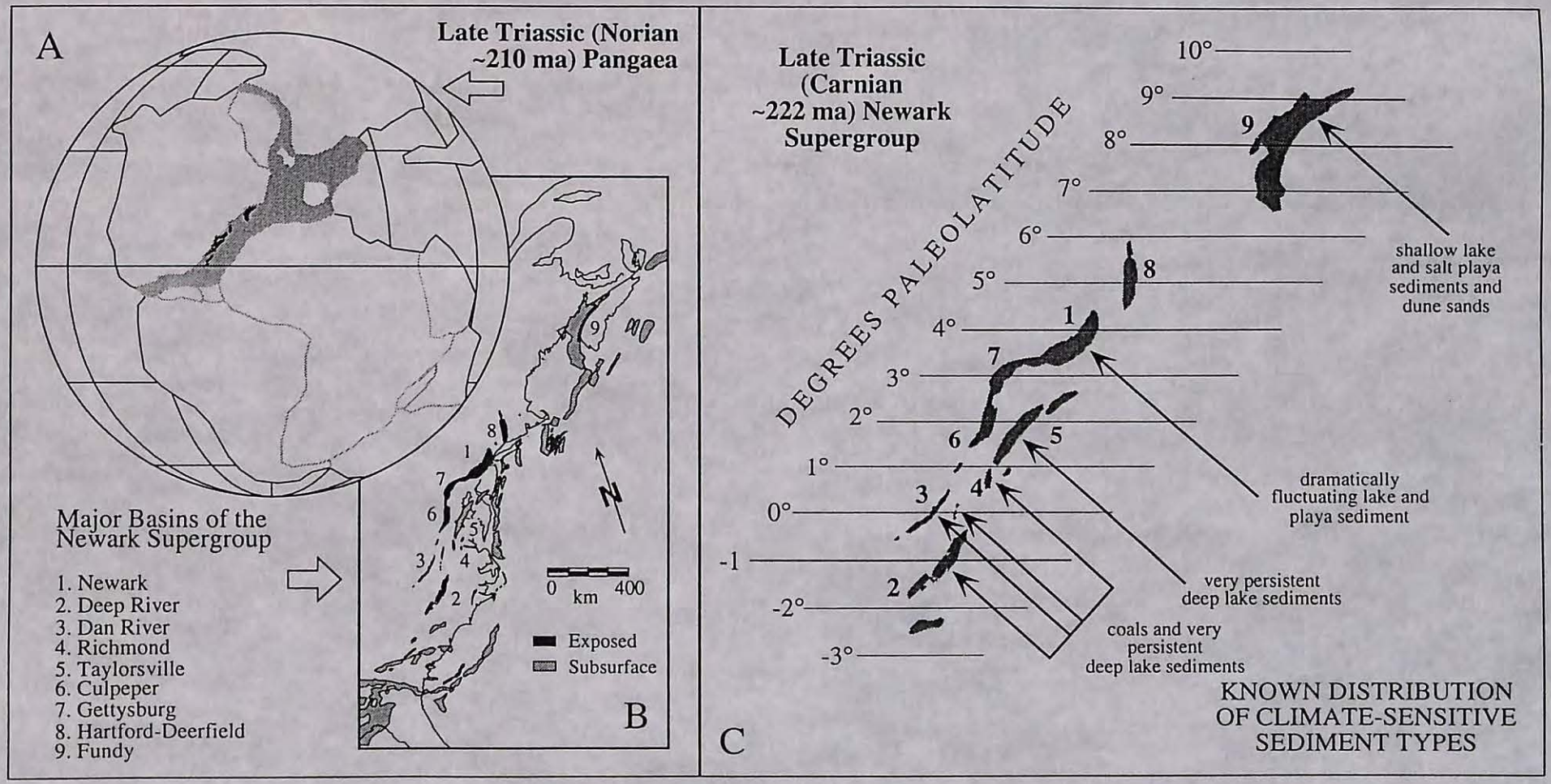

Figure 1: Early Mesozoic basins of the Newark Supergroup.

(A) Paleogeographic position of the terrestrial Newark Supergroup rift basins (black) on the Pangaean supercontinent. The shaded area represents the extent of the rift zone.
(B) Distribution of exposed and subsurface basins on present-day North America.
(C) The Newark Supergroup in the Late Carnian (~222 Ma) showing the distribution of climate sensitive rocks. Numbers for basins as in B.

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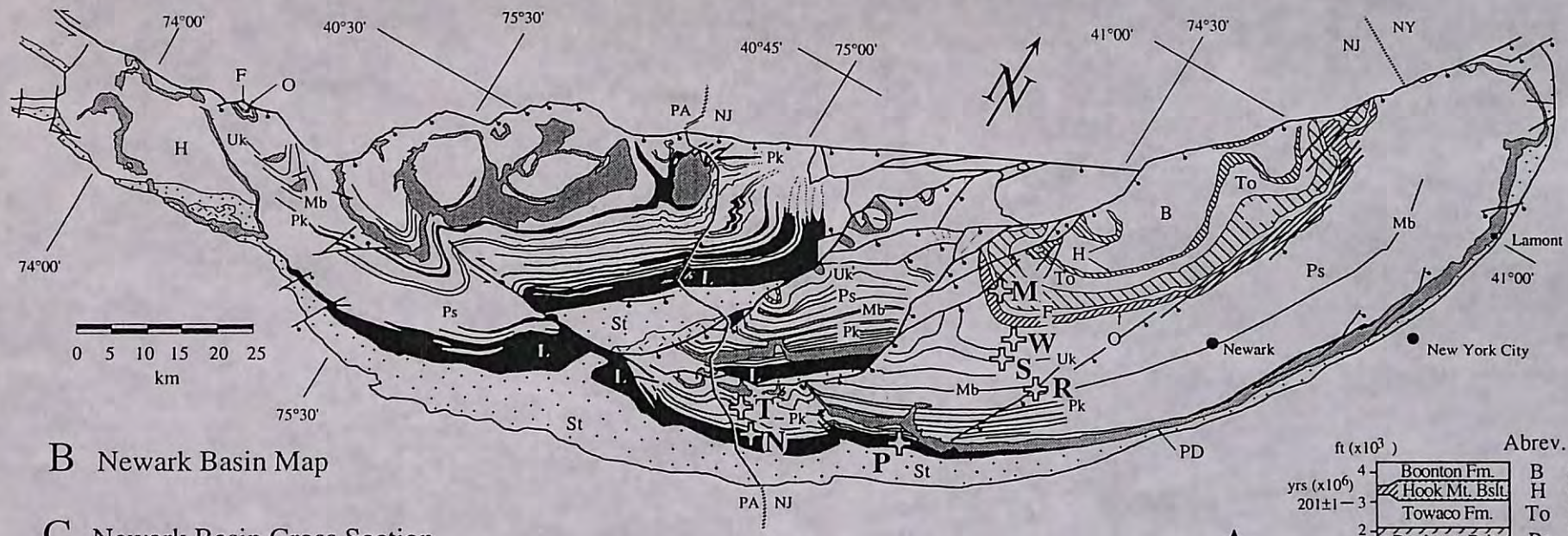

Figure 2 Stratigraphic and geographic positions of the Newark cores.

(A) Time-calibrated Newark basin section, showing continuity of core recovery. Ages are based on U/Pb dates of the Palisades sill, which fed the Orange Mountain Basalt (Ratcliffe, 1988; Dunning and Hodych, 1990), and cyclostratigraphy (Olsen et al., 1991; Olsen et al., in prep.). Abbreviations for cores are: M, Martinsville; W, Weston Canal; S, Somerset; R, Rutgers; T, Titusville; N, Nursery Road; and P, Princeton. The Jurassic part of the section was cored by the Army Corps of Engineers (ACE).

(B) Newark basin map, showing location of drilling sites (crosses). Abbreviations of Newark stratigraphic units are: Mb, Metlars Brook member; PD, Palisades diabase; Pk, Perkasie Member; Ps, Palisades sill; Uk, Ukrainian Member. Abbreviations of formation names are shown in part A.

(C) Schematic cross section of the Newark basin, showing stratigraphic overlap of cores.

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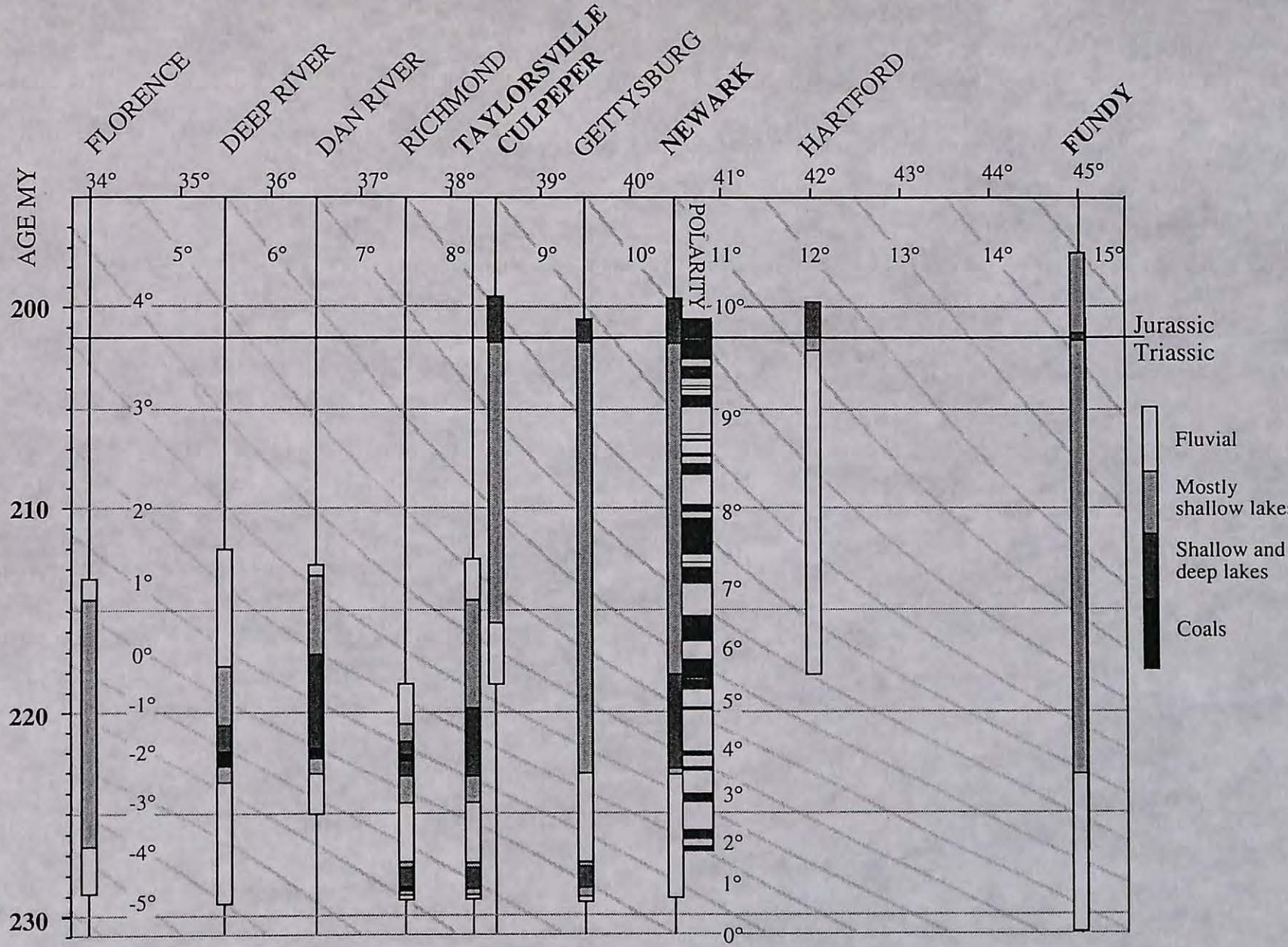

Figure 3: Latitude of the Newark Supergroup basins today (horizontal axis) and during the Mesozoic (vertical axis). Curved lines are of equal paleolatitude. Temporal overlap between the basins to be studied (boldface type) will allow reconstruction of paleolatitudinal diversity gradients during selected time slices. Paleolatitude and magnetostratigraphic data are from Kent et al. (in prep.). Ages are based on radiometric dates and cyclostratigraphy (Dunning and Hodych, 1990; Olsen et al., in prep.).

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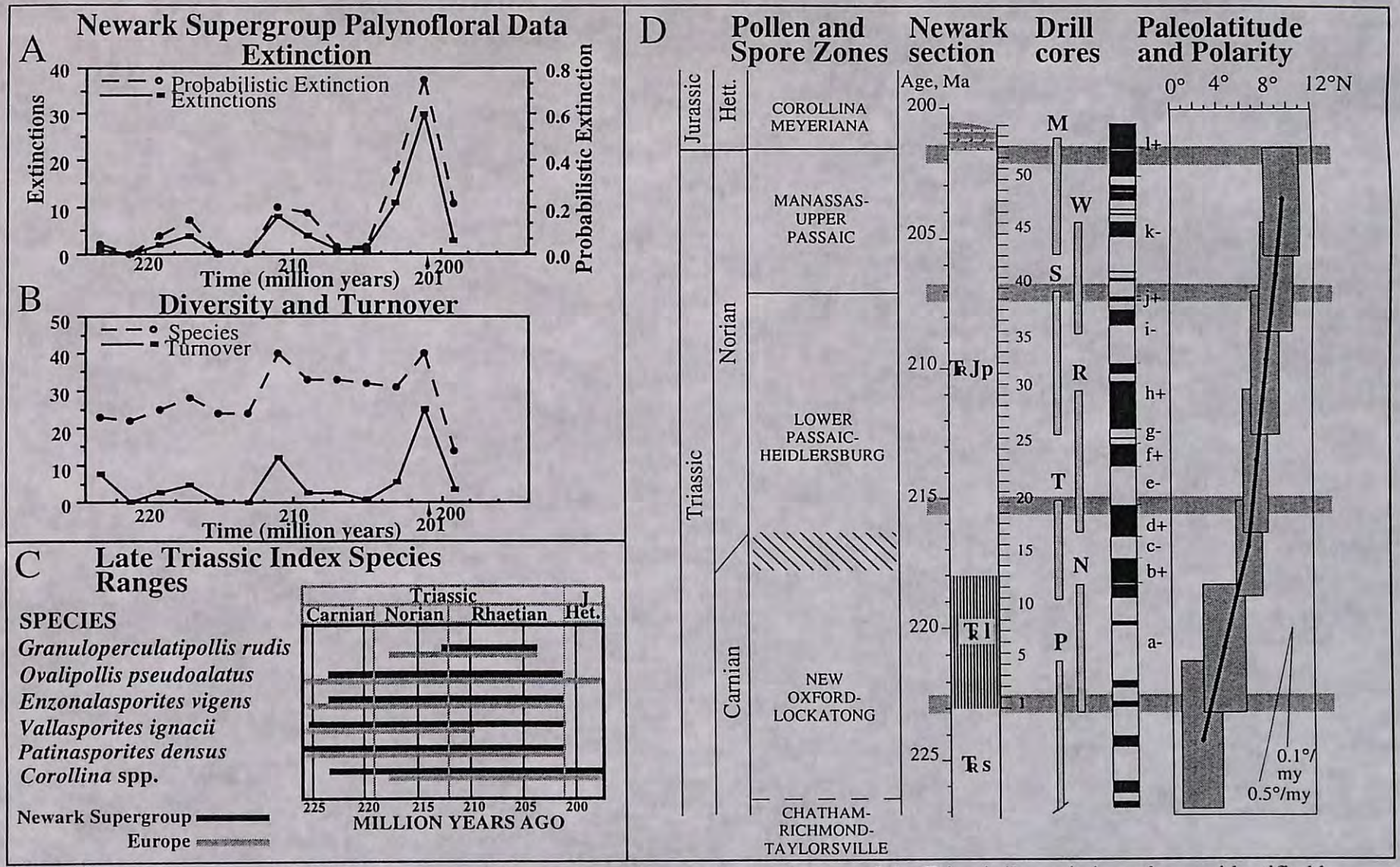

Figure 6: Pollen and spore data from the Newark Supergroup: Arrows denote the age of the Triassic/Jurassic boundary as identified by Newark Supergroup palynostratigraphy and radiometric dates (Cornet, 1977; Fowell, 1992a; Ratcliffe, 1988; Dunning and Hodych, 1990). (A) Extinction measured by two different metrics: the total number of extinctions per interval and the probabilistic extinction rate, defined as the number of extinctions divided by the number of taxa present in the interval (Olsen and Sues, 1986); (B) Diversity, defined as the total number of species present in the interval (species richness), and turnover, defined as the total number of originations and extinctions divided by the length of the interval (Olsen and Sues, 1986). (C) Ranges of Late Triassic index species from the Newark Supergroup (solid bars) and western Europe (grey bars). Dates are derived from the time-calibrated Newark basin section and apply only to Newark Supergroup ranges. European ranges are from Brugman (1983). (D) Palynofloral zones of the Newark basin section, plotted against geologic time, stratigraphic thickness, and core position. Time slices to be studied in this proposal are indicated by gray bars. The radiometric date of the basalt flows is from Dunning and Hodych (1990). Core and formation abbreviations are as in Figure 2.

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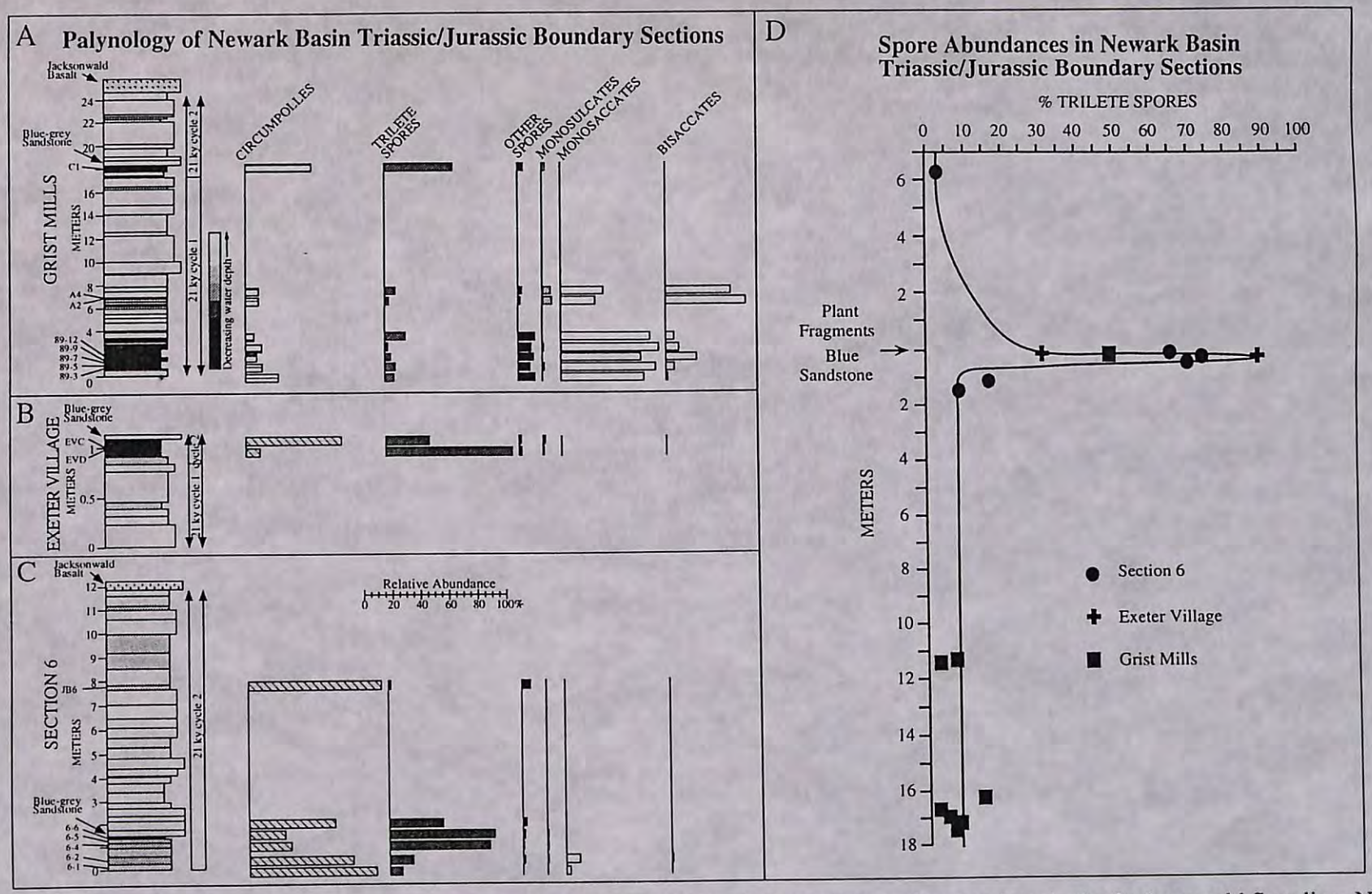

Figure 5: Relative abundances of pollen and spore morphotypes from Triassic/Jurassic boundary sections in the Jacksonwald Syncline, Newark basin. A geologically brief spike in the abundance of spores occurs between diverse, Late Triassic assemblages and Corollina-dominate Early Jurassic palynofloras. 20 ky Milankovitch cycles constrain the duration of the palynological turnover. Stratigraphic correlations are cemented by the unusual, blue-grey sandstone and identical cyclostratigraphy present in all three sections. The Jacksonwald basalt is dated by U/Pb ages of the correlative Palisades sill (Dunning and Hodych, 1990). (A) Grist Mills Section: Sample C1 contains 50% spores and is underlain by diverse assemblages typical of the Late Triassic. (B) Exeter Village Section: Spore-dominated floras are replaced by Jurassic assemblages between samples EVD and EVC. EVD consists of 89% trilete spores; EVC contains 67% Corollina and lacks characteristic Late Triassic species. (C) Section 6: Spore-dominated floras first appear between samples 6-2 and 6-4. Sample JB6 is a typical Jurassic assemblage of 95% Corollina. 6-1 and 6-2 contain unusually high percentages of Corollina for Triassic assemblages, but the presence of Late Triassic index species in these samples precludes a Jurassic age. (D) Percentage of trilete spores from all productive localities in A-C correlated to the base of a distinctive, plant-bearing, blue-grey sandstone. Spore-dominated palynofloras occupy a narrow stratigraphic interval less than .5 m thick. The significance of these assemblages lies in their unique appearance at the Triassic/Jurassic boundary; no other spore-dominated palynofloras have yet been recovered from the overlying or underlying portions of the Newark basin section.

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Olsen, P. E., Kent, D. V., Cornet, B., Witte, W. K., and Schlische, R. W., submitted. Stratigraphy of the Newark rift basin (Early Mesozoic, eastern North America): Results of the Newark basin coring project. For Geol. Soc. Amer. Bull.
Olsen, P. E., Schlische, R. W., and Gore, J. W. eds., 1989. Tectonic, Depositional, and Paleoecological History of Early Mesozoic Rift Basins, Eastern North America (International Geological Congress field trip guidebook T351). American Geophysical Union.
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Silvestri, S. M., and Szajna, M. J., 1993. Biostratigraphy of vertebrate footprints in the Late Triassic section of the Newark basin, Pennsylvania: Reassessment of stratigraphic ranges. In: Lucas, S. G., and Morales, M., eds., The Nonmarine Triassic. New Mexico Museum of Natural History and Science Bulletin No. 3, pp. 439- 445.
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Witte, W. K., Kent, D. V., and Olsen, P. E., 1991. Magnetostratigraphy and paleomagnetic poles from Late Triassic-earliest Jurassic strata of the Newark basin. Geol. Soc. Amer. Bull., 103: 1648-1662.

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BIOGRAPHICAL SKETCH

Provide the following information for the senior personnel on the project. Begin with the Principal Investigator/Project Director.
DO NOT EXCEED 2 PAGES PER PERSON.

CURRICULUM VITAE

Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
sjf@lamont.ldgo.columbia.edu

Birthdate: 12 March, 1965
Social Security No. 396-68-7173

Education:

9/87-1/94 Columbia University
M.A. Geology, February, 1990
M.Phil. Geology, October, 1991
Ph.D. Geology, January, 1994
thesis: Palynology of Triassic/Jurassic Boundary Sections from the Newark Supergroup of Eastern North America: Implications for Catastrophic Extinction Scenarios
supervisor: Dr. P.E. Olsen

9/83-5/87 University of Wisconsin-Madison
B.S. Geology, May, 1987

Experience:

5/94-present Adjunct Associate Research Scientist: Lamont-Doherty Earth Observatory

1/94-present Research Associate: The University of South Carolina
Reconstructing Siberian paleoclimates using palynofloras from deep cores of Lake Baikal

9/87-1/94 Graduate Fellow: Columbia University
Research Assistant: Palynology, biostratigraphy, sedimentology
Teaching Assistant: Introductory geology, biostratigraphy

9/88-12/88 Visiting Palynologist: The Pennsylvania State University
Conducted studies of paleopalynology and plant anatomy

Field Experience:

1988-1993 Mapping, correlation, and palynological sampling of Newark Supergroup outcrops; sampling of Newark cores

1993 Collection of palynological data, description and measurement of formations, Argana basin, Morocco (4/20/93-5/6/93)

1991 Collection of palynological and paleomagnetic data, Trinity Peninsula, Antarctica (1/3/91-4/10/91)

1987 Mapping of sedimentary, metamorphic, and igneous rocks in the Wasatch and Uinta mountains of Utah (6/1/87-7/14/87)

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BIOGRAPHICAL SKETCH

Provide the following information for the senior personnel on the project. Begin with the Principal Investigator/Project Director.
DO NOT EXCEED 2 PAGES PER PERSON.

CURRICULUM VITAE

Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
sjf@lamont.ldgo.columbia.edu

Awards:
AASP-NSF Travel Grant, 1992
Langer Prize (Lamont-Doherty Earth Observatory), 1990
Paleontological Society Student Research Grant, 1989
Best Oral Presentation of Research by a Student (GSA, NE Section Meeting), 1989
UW-Madison Geology Department Outstanding Junior (scholarship), 1986
National Merit Scholar, 1983

Societies:
Sigma Xi
American Association of Stratigraphic Palynologists
Geological Society of America
Paleontological Society
Phi Beta Kappa

Recent scientific collaborators:
Alfred Traverse, Dept. of Geology, The Pennsylvania State Univ., State College, PA
Shay-Maria Silvestri, Dept. of Geology, Rutgers Univ., New Brunswick, NJ
Roy Schlische, Dept. of Geology, Rutgers Univ., New Brunswick, NJ
Ron Litwin, United States Geological Survey, Reston, VA
Bruce Cornet, 27 Tower Hill Ave, Redbank, NJ
Mark Hendrix, Dept. of Geological and Environmental Sciences, Stanford Univ., Stanford, CA
Douglas Williams, Dept. of Geological Sciences, Univ. of South Carolina, Columbia, SC
Arthur Cohen, Dept. of Geological Sciences, Univ. of South Carolina, Columbia, SC
Elena Bezrukova, Limnological Institute, Irkutsk, Siberia

Graduate/post-doctoral advisors
Paul Olsen, Lamont-Doherty Earth Observatory, Palisades, NY
Douglas Williams, Dept. of Geological Sciences, Univ. of South Carolina, Columbia,SC

Publications most relevant to the proposed research:
Fowell, S. J., and Olsen, P. E., 1993. Time-calibration of Triassic/Jurassic palynofloral turnover, eastern North America. Tectonophysics, 222: 361-369.

Fowell, S.J., Cornet, B., and Olsen, P.E., in press. Geologically rapid Late Triassic extinctions: Palynological evidence from the Newark Supergroup. In: Klein, G. D., ed., Pangea: Paleoclimate, Tectonics and Sedimentation During Accretion, Zenith and Break-up of a Supercontinent. Geological Society of America Special Paper 288.

Olsen, P.E., Fowell, S.J., and Cornet, B., 1990. The Triassic/Jurassic boundary in continental rocks of eastern North America; A progress report. In: Sharpton, V. L., and Ward, P. D. eds., Global Catastrophes in Earth History. Geological Society of America Special Paper 247, pp. 585-593.

Fowell, S.J., and Traverse, A., submitted. Late Triassic palynology of the Fundy basin, Nova Scotia and New Brunswick. For Review of Palaeobotany and Palynology.

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Curriculum Vitae of **Paul E. Olsen**

Personal:

Born: August 4, 1953, New York City. U.S. Citizen

Education:

B.A., Geology Yale University, (with honors), 1978.
M. Phil., Ph.D., Biology, Yale University, 1984

Ph.D. Thesis:

Comparative Paleolimnology of the Newark Supergroup: A Study of Ecosystem evolution: Unpublished Ph.D. Thesis, Biology Department, Yale University, 724 p.

Address and Phone:

Lamont-Doherty Earth Observatory of Columbia University, Palisades, New York 10964 USA
Telephone: (914) 365-8491, FAX (914) 365-2312, email polsen@ldeo.columbia.edu

Positions Held:

Jan., 1991 to present, Associate Professor of Geology, Department of Geology, Lamont-Doherty Earth Observatory of Columbia University.
July, 1985 to present: Research Associate American Museum of Natural History.
Nov., 1985 to present: Research Associate Virginia Natural History Museum.
Sept., 1984 to Dec. 1990: Assistant Professor of Geology, Department of Geology, Columbia.
March, 1987 to March, 1990: Associate Editor, Journal Vertebrate Paleontology.
Sept., 1983 to August, 1984: Postdoctoral Fellow, Miller Institute of Basic Research in Science, University of California, Berkeley.

Research Interests:

Global, lacustrine, and terrestrial ecosystem paleoecology, paleoclimatology, paleontology, and sedimentology.

Professional Affiliations:

Geological Society of America, Society of Vertebrate Paleontology, Carolina Geological Society, New York Geological Association, Paleontological Society, New York Petroleum Exploration Society.

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Publications of P.E. Olsen (5 most relevant)

Olsen, P. E., Kent, D V., Cornet, B., Witte, W. K., and Schlische, R. W., submitted, Stratigraphy of the Newark rift basin (Early Mesozoic, Eastern North America): Results of the Newark basin coring project: Geological Society of America.

Olsen, P.E., and Kent, D., 1990, Continental Coring of the Newark Rift: *EOS*, Transactions of the American Geophysical Union, 71, 385, 394.

Olsen, P.E., 1986, A 40-million-year lake record of early Mesozoic climatic forcing. *Science*, v. 234, p. 842-848.

Schlische, R.W., and Olsen, P.E., In 1990, Quantitative filling models for continental extensional basins with applications to the early Mesozoic rifts of eastern North America: *Journal of Geology*, 98, 135-155.

Witte, W. K., Kent, D. V., and Olsen, P. E. , 1991, Magnetostratigraphy and paleomagnetic poles from Late Triassic-earliest Jurassic strata of the Newark basin: Geol. Soc. Amer. Bull., 103, 1648-1662.

Publications of P.E. Olsen (5 other relevant)

Olsen, P.E., Froelich, A.J., Daniels, D.L., Smoot, J.P., and Gore, P.J.W., 1991, Rift basins of early Mesozoic age, In Horton, W., ed., *Geology of the Carolinas*, University of Tennessee Press, Knoxville.

Olsen, P.E., Fowell, S.J., and Cornet, B., 1990, The Triassic-Jurassic boundary in continental rocks of eastern North America: a progress report: in Sharpton, V.L. and Ward, P.D. (eds.), *Global Catastrophes in Earth History; an Interdisciplinary Conference on Impacts, Volcanism, and Mass Mortality*, Geological Society of America Special Paper 247, 585-593.

Olsen, P.E., 1988, Continuity of strata in the Newark and Hartford Basins of the Newark Supergroup: *U.S. Geol. Surv., Bulletin,* 1776, 6-18.

Olsen, P.E., 1988, Paleoecology and Paleoenvironments of the Continental Early Mesozoic Newark Supergroup of Eastern North America: In ed. W. Manspeizer, *Triassic-Jurassic Rifting and the opening of the Atlantic Ocean*, Elsevier, Amsterdam, p. 185-230.

Smoot, J. and Olsen, P. E., 1988, Massive mudstones in basin analysis and paleoclimatic interpretation of the Newark Supergroup: W. Manspeizer, Triassic-Jurassic Rifting and the opening of the Atlantic Ocean, Elsevier, Amsterdam, p. 249-274.

Professional Associations

Graduate/post-doctoral advisors:
Keith S. Thomson, Director, Philadelphia Academy of Science, Philadelphia, PA.
Kevin Padian, Dept. of Paleo., Univ. of California at Berkeley, Berkeley, CA.

Graduate/post-doctoral advisees:
David Reynolds (1994), Exxon Production Research Co., PO Box 2189, Houston, TX
Sarah J. Fowell (1994), LDEO
Roy W. Schlische (1993), Department of Geological Sciences, Rutgers University Busch Campus, Pitscataway, NJ
Peter LeTourneau (present) LDEO
MaryAnn Malicanico (present) LDEO

Scientific collaborators over last 4 years:
Roy Schlische, Dept. of Geology, Rutgers Univ., New Brunswick, NJ.
Joseph Smoot, United States Geological Survey, Denver, CO
Hans Sues, United States National Museum, Washington, D.C.
Neil Shubin, Dept. of Biology, Univ. of Pennsylvania, Philadelphia, PA.
Dennis V. Kent, LDEO, Palisades, NY
William K. Witte, Geophysical Institute, University of Alaska, Fairbanks, AK

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SUMMARY
PROPOSAL BUDGET

Year 1 1/1/95-12/31/95

ORGANIZATION Trustees of Columbia University in the City of New York	FOR NSF USE ONLY PROPOSAL NO.	DURATION (MONTHS) Proposed	Granted
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR Sarah J. Fowell, Adjunct Associate Research Scientist			

A.. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-mos. CAL	ACAD	SUMR	Funds Requested by Proposer	Funds Granted By NSF (If Different)
1. Sarah J. Fowell, Adjunct Associate Research Scientist*	12.00			*	
2. Paul E. Olsen, Associate Professor of Geology	0			n/c	
3.					
4.					
5. *Appointment Expected to PDRS or ARS 1/1/95					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)					
7. (2) TOTAL SENIOR PERSONNEL (1-6)	12.00			*	
B OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. ( ) POST DOCTORAL ASSOCIATES					
2. ( ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)					
3. ( ) GRADUATE STUDENTS					
4. ( ) UNDERGRADUATE STUDENTS					
5. ( ) SECRETARIAL-CLERICAL					
6. ( ) OTHER					
TOTAL SALARIES AND WAGES (A+B)				37,100	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS) at 33.5%				12,429	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A+B+C)				49,529	
D. PERMANENT EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $1,000.) TOTAL PERMANENT EQUIPMENT (SEE ATTACHED BUDGET DETAIL)					
E. TRAVEL 1. DOMESTIC (INCL. CAN. & US POSSESSIONS) 4,800 2. FOREIGN (SEE ATTACHED BUDGET DETAIL)				4,800	
F. PARTICIPANT SUPPORT COSTS 1. STIPENDS $ 2. TRAVEL $ 3. SUBSISTENCE $ 4. OTHER $					
( ) TOTAL PARTICIPANT SUPPORT COSTS					
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES See budget for details				3,770	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				500	
3. CONSULTANT SERVICES					
4. COMPUTER (ADPE) SERVICES				500	
5. SUBCONTRACTS					
6. OTHER See budget for details				500	
TOTAL OTHER DIRECT COSTS				5,270	
H. TOTAL DIRECT COSTS (A THROUGH G)				59,599	
I.. INDIRECT COSTS (SPECIFY RATE AND BASE) TOTAL INDIRECT COSTS MTDC = 59,099 x 53%				31,322	
J. TOTAL DIRECT AND INDIRECT COSTS (H+I)				90,921	
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECTS SEE GPM 252 AND 253)					
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				90,921	

M. COST SHARING: PROPOSED LEVEL $	AGREED LEVEL IF DIFFERENT $	
PI/PD TYPED NAME & SIGNATURE*	DATE	FOR NSF USE ONLY INDIRECT COST RATE VERIFICATION
INST. REP TYPED NAME AND SIGNATURE*	DATE	Date Checked / Date of Rate Sheet / Initials-ORG

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SUMMARY PROPOSAL BUDGET

Year II 1/1/96-12/31/96

ORGANIZATION Trustees of Columbia University in the City of New York	FOR NSF USE ONLY PROPOSAL NO.	DURATION (MONTHS) Proposed	Granted
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR Sarah J. Fowell, Adjunct Associate Research Scientist			

A.. SENIOR PERSONNEL: PI/PD, Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-mos. CAL	ACAD	SUMR	Funds Requested by Proposer	Funds Granted By NSF (If Different)
1. Sarah J. Fowell, Adjunct Associate Research Scientist*	12.00			*	
2. Paul E. Olsen, Associate Professor of Geology	0			n/c	
3.					
4.					
5. *Appointment expected to PDRS or ARS.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)					
7. (2) TOTAL SENIOR PERSONNEL (1-6)	12.00			*	
B OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. ( ) POST DOCTORAL ASSOCIATES					
2. ( ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)					
3. ( ) GRADUATE STUDENTS					
4. ( ) UNDERGRADUATE STUDENTS					
5. ( ) SECRETARIAL-CLERICAL					
6. ( ) OTHER					
TOTAL SALARIES AND WAGES (A+B)				39,697	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS) at 33.5%				13,299	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A+B+C)				52,996	
D. PERMANENT EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $1,000.)					
TOTAL PERMANENT EQUIPMENT (SEE ATTACHED BUDGET DETAIL)					
E. TRAVEL 1. DOMESTIC (INCL. CAN. & US POSSESSIONS) 1,500 2. FOREIGN (SEE ATTACHED BUDGET DETAIL)				1,500	
F. PARTICIPANT SUPPORT COSTS 1. STIPENDS $ 2. TRAVEL $ 3. SUBSISTENCE $ 4. OTHER $					
( ) TOTAL PARTICIPANT SUPPORT COSTS					
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES See budget for details				900	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				500	
3. CONSULTANT SERVICES					
4. COMPUTER (ADPE)SERVICES				500	
5. SUBCONTRACTS					
6. OTHER See budget for details				500	
TOTAL OTHER DIRECT COSTS				2,400	
H. TOTAL DIRECT COSTS (A THROUGH G)				56,896	
I.. INDIRECT COSTS (SPECIFY RATE AND BASE) TOTAL INDIRECT COSTS MTDC = 56,396 x 53%				29,890	
J. TOTAL DIRECT AND INDIRECT COSTS (H+I)				86,786	
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECTS SEE GPM 252 AND 253)					
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				86,786	

M. COST SHARING: PROPOSED LEVEL $	AGREED LEVEL IF DIFFERENT $	
PI/PD TYPED NAME & SIGNATURE*	DATE	FOR NSF USE ONLY INDIRECT COST RATE VERIFICATION
INST. REP TYPED NAME AND SIGNATURE*	DATE	Date Checked / Date of Rate Sheet / Initials-ORG

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NSF Form 1030 (1/94)) Supercedes All Previous Editions *SIGNATURES REQUIRED ONLY FOR REVISED BUDGET (GPM 233)

SUMMARY
PROPOSAL BUDGET

CUM 1/1/95-12/31/96

FOR NSF USE ONLY

ORGANIZATION Trustees of Columbia University in the City of New York	PROPOSAL NO.	DURATION (MONTHS) Proposed	Granted
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR Sarah J. Fowell, Adjunct Associate Research Scientist			

A.. SENIOR PERSONNEL:PI/PD,Co-PI's, Faculty and Other Senior Associates (List each separately with title, A.7. show number in brackets)	NSF Funded Person-mos. CAL	ACAD	SUMR	Funds Requested by Proposer	Funds Granted By NSF (If Different)
1. Sarah J. Fowell, Adjunct Associate Research Scientist*	24.00			*	
2. Paul E. Olsen, Associate Professor of Geology	0			n/c	
3.					
4.					
5. *Appointment expected to PDRS or ARS 1/1/95.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)					
7. (2) TOTAL SENIOR PERSONNEL (1-6)	24.00			*	
B OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. ( ) POST DOCTORAL ASSOCIATES					
2. ( ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)					
3. ( ) GRADUATE STUDENTS					
4. ( ) UNDERGRADUATE STUDENTS					
5. ( ) SECRETARIAL-CLERICAL					
6. ( ) OTHER					
TOTAL SALARIES AND WAGES (A+B)				76,797	
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS) at 33.5%				25,728	
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A+B+C)				102,525	
D. PERMANENT EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $1,000.)					
TOTAL PERMANENT EQUIPMENT (SEE ATTACHED BUDGET DETAIL)					
E. TRAVEL 1. DOMESTIC (INCL. CAN. & US POSSESSIONS) 6,300 2. FOREIGN (SEE ATTACHED BUDGET DETAIL)				6,300	
F. PARTICIPANT SUPPORT COSTS 1. STIPENDS $ 3. SUBSISTENCE $ 2. TRAVEL $ 4. OTHER $					
( ) TOTAL PARTICIPANT SUPPORT COSTS					
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES See budget for details				4,670	
2. PUBLICATION COSTS/DOCUMENTATION/DISSEMINATION				1,000	
3. CONSULTANT SERVICES					
4. COMPUTER (ADPE)SERVICES				1,000	
5. SUBCONTRACTS					
6. OTHER See budget for details				1,000	
TOTAL OTHER DIRECT COSTS				7,670	
H. TOTAL DIRECT COSTS (A THROUGH G)				116,495	
I.. INDIRECT COSTS (SPECIFY RATE AND BASE) TOTAL INDIRECT COSTS MTDC = 115,495 x 53%				61,212	
J. TOTAL DIRECT AND INDIRECT COSTS (H+I)				177,707	
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECTS SEE GPM 252 AND 253)					
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				177,707	

M. COST SHARING: PROPOSED LEVEL $	AGREED LEVEL IF DIFFERENT $
PI/PD TYPED NAME & SIGNATURE*	DATE
INST. REP TYPED NAME AND SIGNATURE*	DATE

FOR NSF USE ONLY
INDIRECT COST RATE VERIFICATION

Date Checked	Date of Rate Sheet	Initials-ORG

NSF Form 1030 (1/94)) Supercedes All Previous Editions *SIGNATURES REQUIRED ONLY FOR REVISED BUDGET (GPM 233)

Hunt Institute for Botanical Documentation

Salaries & Wages	MM	Year I 1/1/95 12/31/95	Year II 1/1/96 12/31/96	CUMULATIVE 1/1/95 12/31/96
A. Senior Personnel				
Sarah J. Fowell, Adjunct Associate Research Scientist*	12/12	*	*	*
Paul E. Olsen, Associate Professor of Geology	0/0	n/c	n/c	n/c
*Appointment expected to Post-Doc Research Scientist or Associate Research Scientist prior to start of this proposal.		37,100	39,697	76,797
B. Other Personnel		0	0	0
Total Salaries/Wages		37,100	39,697	76,797
Fringe Benefits @ 33.5%		12,429	13,299	25,728
Total Salaries/Wages and Fringe Benefits		49,529	52,996	102,525
Permanent Equipment				
Total Permanent Equipment		0	0	0
Domestic Travel See Budget Justification		4,800	1,500	6,300
Foreign Travel				
Total Travel Expenses		4,800	1,500	6,300
Other Direct Costs				
1. Materials/Supplies See Budget Justification		3,770	900	4,670
2. Publications		500	500	1,000
3. Consultant Services				0
4. Computer LDEO Network Subscription		500	500	1,000
5. Subcontracts				0
6. OTHER Communications/Shipping/Xerox Charges See Budget Justificaiton		500	500	1,000
Total Other Direct Costs		5,270	2,400	7,670
Total Direct Costs		59,599	56,896	116,495
Modified Total Direct Costs (Less permanent equipment, LDEO computer subscription cost)		59,099	56,396	115,495
Indirect Cost Recovery @ 53%		31,322	29,890	61,212
Total Direct and Indirect Costs		90,921	86,786	177,707

Hunt Institute for Botanical Documentation

BUDGET JUSTIFICATION

A. Salary

The bulk of the requested funds for salary are for the post-doctoral salary of S.J. Fowell, who will carry out the two year program of field work, core sampling and palynomorph species identification. P.E. Olsen will serve as coordinator and advisor for inter-basin correlations but will not receive a salary from this proposal.

E1. Domestic Travel

Travel funds are for driving to field sites from Palisades, N.Y. and for attendance at national meetings of either GSA or AGU to present results.

Year 1

$2,500 is requested for S.J. Fowell and D.V. Kent (of the L-DEO Paleomagnetics Laboratory) to do field work in the Fundy basin (10 days each @$97 subsistence plus 2,000 miles @.28)

$800 is requested for S.J. Fowell to collect samples in the Culpeper basin (7 days @$84 subsistence plus 700 miles @.28 and tolls).

Years 1 & 2

$1,500 is budgeted for airfare and subsistence for one PI at one scientific meeting (Airfare $712; 5 days subsistence @$126; registration fees $158)

G1. Materials and Supplies

Year 1 - Total $3,770

$1,600 is requested for purchase of chemicals necessary for processing of the proposed 200 palynomorph samples; the bulk of this sum will be sent on IIF (2 cases @ $350 each). $870 is budgeted for slides and slide-making equipment (coverslips, slide boxes, mounting medium). $500 is requested to replace expendable lab supplies including beakers, funnels, centrifuge tubes, and pipettes. Because these chemicals and supplies will be ordered in bulk, funds for two years of processing are included in the first year of the budget. $300 is for purchase of film and darkroom supplies needed to prepare plates for publication. $500 is for office and computer supplies.

Year 2 - Total $900

$300 is budgeted for purchase of film and darkroom supplies needed to prepare plates for publication. $100 is for additional chemicals and/or lab supplies. $500 is for office and computer supplies.

G1. Publications

$500 per year is requested for publication expenses.

G4. Computer Expenses

$500 per year is for Sun and network expenses.

G6. Other

$250 per year is for copier expenses. $250 per year is for communications and shipping.

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Current and Pending Support
5/26/94

SARAH FOWELL

A Supporting Agency	B Project Title	C Award Amount	D Period Covered By Award	E Man-Months Acad. Sum. %Effort	F Location
A. Current Support					
NONE					
B. Pending Support					
NSF	THE EFFECTS OF PALEOALTITUDE AND PRECIPITATION GRADIENTS ON TRIASSIC PALYNOFLORAL DIVERSITY. (OLSEN, P.)	177,707	1/1/95 - 12/31/96	12/yr	LDEO
C. Outstanding Increments					
NONE					
D. Proposals Planned to be Submitted in Near Future:					
NONE					
E. Transfer of Support:					
NONE					
F. Other Agencies to Which Proposal Has Been/Will be Submitted:					
NONE					

Hunt Institute for Botanical Documentation

Current and Pending Support
5/18/94

PAUL OLSEN

A Supporting Agency	B Project Title	C Award Amount	D Period Covered By Award	E Man-Months Acad. Sum. Cal.	F Location
A. Current Support					
NSF EAR 89-16726, SC. A	30 MILLION YEAR RECORD OF THE EVOLUTION OF A CONTINENTAL RIFT: THE EARLY MESOZOIC NEWARK BASIN. (KENT, D.)	481,139	6/1/90 - 11/30/94	2 sum.mos./yr	LDEO
B. Pending Support					
NSF	THE EFFECTS OF PALEOALTITUDE AND PRECIPITATION GRADIENTS ON TRIASSIC PAYLNOFLORAL DIVERSITY. (FOWELL, S.)	177,707	1/1/95 - 12/31/96	N/C	LDEO
NSF #7295	ACQUISITION OF A MASS SPECTROMETRIC SYSTEM FOR K/Ar DATING BY THE 40Ar/39Ar METHOD. (BROECKER, W. ANDERS, M. KENT, D. LANGMUIR, C. SCHLOSSER, P. STECKLER, M.)	227,025	9/15/94 - 9/14/95	N/C	LDEO
NSF #7086R	MILANKOVITCH FORCING OF CONTINENTAL MONSOON ACROSS THE EQUATOR OF PANGAEA. (KENT, D.)	387,243	1/1/94 - 12/31/96	5 total	LDEO

C. Outstanding Increments

NONE

D. Proposals Planned to be Submitted in Near Future:

NONE

E. Transfer of Support:

NONE

F. Other Agencies to Which Proposal Has Been/Will be Submitted:

NONE

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FACILITIES, EQUIPMENT & OTHER RESOURCES

FACILITIES: Identify the facilities to be used at each performance site listed and, as appropriate, indicate their capacities, pertinent capabilities, relative proximity, and extent of availability to the project. Use "Other" to describe the facilities at any other performance sites listed and at sites for field studies. USE additional pages if necessary,.

Laboratory: Dedicated and proximal palynology laboratory with full processing capabilities.

Clinical:

Animal:

Computer: Three Macintosh Quadras and institutional Sun system.

Office:

Other:

MAJOR EQUIPMENT: List the most important items available for this project and, as appropriate identifying the location and pertinent capabilities of each.

Fume Hood, Centrifuge, Olympis Microscope - Core Lab - Lamont-Doherty Earth Observatory.

OTHER RESOURCES: Provide any information describing the other resources available for the project. Identify support services such as consultant, secretarial, machine shop, and electronics shop, and the extent to which they will be available for the project. Include an explanation of any consortium/contractual arrangements with other organizations.

Limited secretarial support is available through our division (Oceans and Climates).

Hunt Institute for Botanical Documentation

THE PENNSYLVANIA STATE UNIVERSITY
DEPARTMENT OF GEOSCIENCES
PALYNOLOGICAL LABORATORIES
307 DEIKE BUILDING
UNIVERSITY PARK, PA 16802, USA
Phone: (814)863-3419; Fax: 814-863-7823
E-Mail: traverse@ems.psu.edu

11 August, 1999

Dr. Sarah J. Fowell
Department of Geology & Geophysics
P. O. Box 755780
University of Alaska
Fairbanks, AK 99775

Dear Sarah:

Haven't been in touch for a while, so here's an update.

We're just back from the International Botanical Congress, which met in St. Louis. With the nomenclatural sessions, in which I was much involved, it took two weeks. During the first week, the daytime temps were well over 100 F., including one reading of 112. Made me think of Alaska! Then we were in Chicago for a few days-reunion of Betty with a bunch of childhood friends-they get together every year or two.

At the Congress I picked up the enclosed fliers, as I thought you should know about the books and have access to them, if you don't.

Also, I have a few more reprints for you, that your card says you don't have.

It seems unlikely we'll make it to AK this year-would Sept. be too late? Trouble is, we are going to AASP in Georgia in Oct., and we need to spend the usual ten days or so in late Sept.-early Oct. at our place in the Adirondacks. At the moment we are trying to get picked up from the long absence, and face various incoming relatives.

Would appreciate news from you regarding your decisions and other people's decisions that affect you.

All the best.

Cordially,

Alfred Traverse
Professor Emeritus of Palynology

Encl.

Hunt Institute for Botanical Documentation

To: Alfred Traverse <traverse@ems.psu.edu>
Subject: Re: rec.

Hello Alfred,

You sent the letter to the right address. Brew is the committee chair, I guess. But D. Gonzales is the one I've been dealing with over the phone. He asked that any e-mail recommendations be sent to him.

Snail mail is OK, but they are trying to make a decision soon, so an e-mail version can't hurt. Try copying the text of the letter, and then pasting it into an empty e-mail box. If that doesn't work, don't worry. I haven't even been able to locate Paul yet, so your recommendation is likely to get there before his does.

I, too, hope to stay in Alaska. I know that the department wants me to stay, which is nice. But the financial situation at the university is such that I fear the money for a full 9-month position may never be available. They are still working to scrape the dollars together, so we'll see what happens. But I think I am wise to look elsewhere. It keeps them nervous, if nothing else.

Thanks for your efforts on my behalf!

Sarah

Dr. Sarah J. Fowell
Department of Geology and Geophysics
Box 755780
University of Alaska Fairbanks
Fairbanks, AK 99775
Phone: (907) 474-7810
Fax: 907 474 5163
e-mail: ffsjf@aurora.alaska.edu

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Phone: (814)863-3419; Fax: 814-863-7823

Apr. '99

Dr. Douglas C. Brew
Department of Geology
Fort Lewis College
1000 Rim Drive
Durango, CO 81301-3999

Dear Dr. Brew:

This letter is in support of the candidacy of Sarah J. Fowell, Ph. D., for your position as assistant professor in what seems to be a rather general geological area.

I have known Sarah for more than ten years. She came here for a semester to take my palynology course because Columbia did not offer such instruction. Since then she has spent several periods totalling more than a year here, using my library and laboratory in connection with her research. She has been a guest at our home during these visits several times. (The last time was two years ago when we were in the midst of such a period, as she and I were working jointly in the Triassic of New Brunswick.) I eventually became part of her doctoral committee and participated in her defense, etc. I was her actual advisor, because her work was in palynology, and the professor with whom she worked at Lamont-Doherty is a vertebrate paleontologist.

Sarah is a very intelligent, highly organized and capable person, a quick learner, resourceful and very industrious. Her Triassic research has been a big contribution to this field, and I have greatly profitted from our joint efforts in the Fundy Basin. I very much hope to be able to do joint research with her again soon. Based on her performance in my courses and in her doctoral research, our research together, and general observation, I expect Sarah to continue to be a very productive scientist. We have also found her to be good company and fun to have around.

On several occasions I have had Sarah give lectures for me here, and I think so highly of her teaching ability that I asked her to give the lectures and teach the labs in my course for several weeks while I was out of the country about three years ago. She lived in our home and used the library and collections of my lab, in connection with her research in Lake Baikal. The students in the class were very happy with Dr. Fowell's performance in the course, and some went out of there way to mention her in the course evaluation.

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I have not been to Alaska to visit Sarah in her new situation in Fairbanks, but second-hand reports are that she has continued her excellent relationship with students. You could get more up to date info on that from the people at UA, of course, but I would be startled if if weren't supportive of her application for your position. She would be especially good at the undergraduate research work that you want the candidate for your position to undertake.

Of the areas mentioned in your announcement, Sarah is most obviously highly qualified in all aspects of paleontology, stratigraphy, and sedimentology. Also, from her long association with Lamont-Doherty she has filled in her geological background, which was already excellent, so that she is very well qualified to teach any aspect of basic geology. At Lamont-Doherty she also became very proficient in the use of the computer for imaging, graph production, and many other geological applications that I barely understand. In the field she is an unbelievable dynamo, with experience in Antarctica, Siberia, Mongolia, etc. She has headed up Lamont-Doherty field teams-for example a couple of years ago in Mongolia--with great distinction. Although she is a small, delicate looking woman, she is obviously wiry and tough because physical problems have never even been mentioned in connection with any of these challenging field assignments.

In brief, Dr. Fowell is a most talented individual whom your students are sure to like and a woman who will make a significant contribution wherever she goes. I recommend her to you without qualification. If you are considering fairly recent Ph.D.s, and if your needs are as stipulated in your announcement, it is hard for me to imagine your finding a better qualified individual.

Yours very truly,

Alfred Traverse
Professor Emeritus of Palynology

Hunt Institute for Botanical Documentation

Fowell

Delivered-To: traverse@ems.psu.edu
Date: Thu, 25 Mar 1999 09:22:51 -0900
To: traverse@ems.PSU.EDU
From: ffsjf@aurora.alaska.edu
Subject: another recommendation

Hello Alfred,

I hope you are enjoying spring in Pennsylvania. We're not exactly having spring here yet, but some of the snow is getting slushy.

I'm writing to ask for yet another letter of recommendation. This one goes to:

Dr. Douglas C. Brew
Department of Geology
Fort Lewis College
1000 Rim Drive
Durango, CO 81301-3999

I spoke to them this morning, and they have requested letters ASAP.
The job ad reads:

Fort Lewis College Assistant professor of geology

Tenure track position Fall 1999. Ph.D. required. Primary teaching responsibilities include stratigraphy, sedimentology, paleontology, historical geology. Must also be active in research/scholarly work, especially undergraduate research. Expertise and/or interest in petroleum geology, environmental geology, hydrogeology, structural geology, or geophysics desirable. Additional teaching obligations may include interdisciplinary general education courses.

Obviously this position comes with a heavy teaching load, but luckily I've already taught sedimentology, paleontology, and historical geology.

The faculty here recently voted to keep me on in a tenure-track, 9-month position, and to offer it to me as a direct hire. However, the vacated position that I would be filling was only a 3/4 position. They don't want to fill the position until they have money for the full 9 months. The most recent proposal - to fund the remaining 1/4 of the position as a RIP (retirement incentive program) replacement was recently rejected by the provost. Which was to be expected. Anyway, I hope to remain here, but the funding is very uncertain. I wanted to be able to sign a contract this spring, but I think that's not going to be possible. Perhaps an interview at Ft. Lewis will galvanize UAF into action, but if not Durango wouldn't be a bad place to go. Obviously this is not to be mentioned in your letter.

Please let me know when the letter has been sent, and thanks once again for

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yet another recommendation.

Best to you and to Betty. Any chance you'll make it to Alaska this summer?

Sarah

Dr. Sarah J. Fowell
Department of Geology and Geophysics
Box 755780
University of Alaska Fairbanks
Fairbanks, AK 99775
Phone: (907) 474-7810
Fax: 907 474 5163
e-mail: ffsjf@aurora.alaska.edu

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11 January, 1999

Dr. Jeffery Templeton
Geology Search Committee (Position 2)
Natural Science and Mathematics Division
WOU
Monmouth, OR 97361

Dear Dr. Templeton:

This letter is in support of the candidacy of Sarah J. Fowell, Ph. D., for your position as assistant professor in the sedimentology-stratigraphy-paleontology area.

I have known Sarah for more than ten years. She came here for a semester to take my palynology course because Columbia did not offer such instruction. Since then she has spent several periods totalling more than a year here, using my library and laboratory in connection with her research. She has been a guest at our home during these visits several times. (The last time was two years ago when we were in the midst of such a period, as she and I were working jointly in the Triassic of New Brunswick.) I eventually became part of her doctoral committee and participated in her defense, etc. I was her actual advisor, because her work was in palynology, and the professor with whom she worked at Lamont-Doherty is a vertebrate paleontologist.

Sarah is a very intelligent, highly organized and capable person, a quick learner, resourceful and very industrious. Her Triassic research has been a big contribution to this field, and I have greatly profitted from our joint efforts in the Fundy Basin. I very much hope to be able to do joint research with her again soon. Based on her performance in my courses and in her doctoral research, our research together, and general observation, I expect Sarah to be a very productive scientist. We have also found her to be good company and fun to have around.

On several occasions I have had Sarah give lectures for me here, and I think so highly of her teaching ability that I asked her to give the lectures and teach the labs in my course for several weeks while I was out of the country. She lived in our home and used the library and collections of my lab, in connection with her research in Lake Baikal. The students in the class were very happy with Dr. Fowell's performance in the course, and some went out of there way to mention her in the course evaluation.

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I have not been to Alaska to visit Sarah in her new situation in Fairbanks, but second-hand reports are that she has continued her good relationship with students. You could get more up to date info on that from the people at UA, of course, but I would be startled if if weren't supportive of her application for your position.

Of the areas mentioned in your announcement, Sarah is obviously highly qualified in all aspects of paleontology, stratigraphy, and sedimentology. From her long association with Lamont-Doherty she has filled in her geological background, which was already excellent, so that she is qualified to teach any aspect of basic geology. At Lamont-Doherty she also became very proficient in the use of the computer for imaging, for graph production, and many other applications that I barely understand. In the field she is an unbelievable dynamo, with experience in Antarctica, Siberia, Mongolia, etc. She has headed up Lamont-Doherty field teams with great distinction. Although she is a small, delicate looking woman, she is obviously wiry and tough because physical problems have never even been mentioned in connection with any of these challenging field assignments.

In brief, Dr. Fowell is a most talented individual whom your students are sure to like and a woman who will make a significant contribution mark wherever she goes. I recommend her to you without qualification. If you are considering fairly recent Ph.D.s, and if your needs are as stipulated in your announcement, it is hard for me to imagine your finding a better qualified individual.

Yours very truly,

Alfred Traverse
Professor Emeritus of Palynology

Hunt Institute for Botanical Documentation

To: ffsjf@aurora.alaska.edu
From: Alfred Traverse <traverse@ems.psu.edu>
Subject: Re: Hello from Alaska
Cc:
Bcc:
Attached:

Hi, Sarah:

Nice you had a good visit home. You can get back on the Xmas list by the simple expedient of sending us a seasonal greeting.

Will take care of the rec. letter immediately.

Jeez, I thought I knew Oregon pretty well, but Monmouth is a new one on me. I have a Cretaceous project going in SW Oregon. We quartered in a place called Roseburg. Has a nice Chinese restaurant.

The teaching slides are yours, though you better not wait too many years before collecting them and (I think) three boxes of literature stored at the condo.

This January is proving tough around here. Our place in the country is covered with ice, two-three inches deep over the whole 12 acres. 3-4 inches of snow on top. I went down the lane (.2 mi.) on my sled a couple of times yesterday. Wish I'd had a timer, because I think I set a new record. The old one was/is 45 sec. This morning I went to pick up my snowplow at the shop in Huntingdon and took a header in their parking lot. It was so bad that the boss came out for me on his hands and knees and reached an ice chippper to me. Thank God, there was a truck in the way, and Betty didn't see me go.

On to the letter!

Best. Alfred.

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Delivered-To: traverse@ems.psu.edu
Date: Thu, 7 Jan 1999 13:37:35 -0900
To: Alfred Traverse <traverse@ems.psu.edu>
From: ffsjf@aurora.alaska.edu
Subject: Re: Hello from Alaska

Hello Alfred,

I have just returned from a week in Wisconsin, visiting my mother and grandmother. I am pleased to find that I have a note from you and Betty, now that I am back on e-mail. Do put me back on your Christmas list, if I have been automatically deleted.

At this point, I am writing to ask for the first of what will, I hope, be several recommendations. I am applying to Western Oregon University - see the description which I've pasted below. It is a small department, but they are looking for someone with my teaching background, so I've chosen to apply. I fear this is one of those jobs where letters are required up front. I tend to avoid applying for such positions - because I think it is ridiculous to ask for letters from all applicants. But I've decided to apply for this one anyway, since I think it looks like a good place for me. The address to which you should send the letters can also be found in the blurb below. I fear the deadline is Jan. 15, and I do apologize for the short notice. I didn't realize, initially, that letters had to be send at the same time as the application package. Please just send the letter straight to Oregon. I will let them know it is coming so they can toss it into my file.

Thus far, things have gone quite well here in Alaska, and I may yet be offered a tenure-track position. They have spoken to me about this possibility no less than 3 times. It is time for me to put some pressure on them, which means applying for other jobs. In fact, they have actually requested that I do this, so that they can put pressure on the administration. Promising, but rather like what happened last year... Hopefully, even if a more secure position does not materialize here, I will get another desirable offer.

Please do save your teaching transparencies for me. If I remain here, it is likely that I will be teaching Paleopalynology/Palynology next year or the year after. And I hope that I will be able to teach such a class no matter where I wind up. So any teaching materials you can pass along will be greatly appreciated!

All the best to you and Betty. If you can squeeze in an AK visit this summer, do so! It would be very fun to play your host in Fairbanks.

Sarah

Job Ad:

ASSISTANT PROFESSOR OF GEOLOGY (2 POSITIONS)
Western Oregon University seeks two tenure-track positions, beginning Sept. 16, 1999. Position 1: Requires specialization in environmental geology with a background in GIS/remote sensing and an emphasis in surficial processes and hazards assessment. Teaching responsibilities include introductory courses and upper- division courses in environmental geology, water resources, and geomorphology. Position 2: Requires specialization in sedimentology and stratigraphy with an expertise in paleontology. Teaching responsibilities include introductory courses and upper- division courses in paleontology, sedimentation, and stratigraphy. Qualifications: Ph.D. in geology in the designated specialty area. Must demonstrate strong commitment to teaching, conducting field trips, and research at the undergraduate level. Evidence of published research, computer expertise, and a research interest in the Pacific Northwest is highly desirable. A strong interest in teaching introductory physical science courses also required. The successful

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candidates will play a key role in developing and implementing curriculum in the Earth Science program. Application: Send letter of application, curriculum vitae, three letters of reference, and graduate transcripts by Jan. 15, 1999 to: Dr. Jeffery Templeton, Geology Search Committee (specify position 1 or 2), Natural Sciences and Mathematics Division, WOU, Monmouth, OR 97361. Phone: (503)838-8206. E-mail: templej@wou.edu. AA/EOE.

Dr. Sarah J. Fowell
Department of Geology and Geophysics
Box 755780
University of Alaska Fairbanks
Fairbanks, AK 99775
Phone: (907) 474-7810
Fax: 907 474 5163
e-mail: ffsjf@aurora.alaska.edu

Hunt Institute for Botanical Documentation

To: ffsjf@aurora.alaska.edu
From: Alfred Traverse <traverse@ems.psu.edu>
Subject: Re: Hello from Alaska
Cc:
Bcc:
Attached:

Dear Sarah:

Sometimes I swear there must be something to ESP. Just yesterday Betty and I were talking about you--noting that we hadn't received an annual greeting from you, but also noting that you somehow got left off our list too (it runs to way over a hundred items). Betty thinks that maybe we didn't get one last year either, and that will have triggered the "drop."

Every so often I look at the 2-3 boxes at the apartment labelled Sarah Fowell books etc. and wonder how you are doing. Also, I had planned to give you all of my teaching transparencies if you want them, but I see no mention of palynology teaching in your letter. Hmmmm.

Well, of course, I am happy to write recommendations, though I was hoping that you would catch on up there. It's nice to have a contact in Alaska! It would be fun to visit you next summer. Our plates are pretty full, though. Obligatory two weeks in the Adirondacks. Betty's 50th reunion at Wellesley. Possibly a trip to China, but that is pretty iffy (I was invited to give a lecture, but I am not sure it will materialize).

Perhaps you already know that 1998 was the year when the boom was lowered on my space at PSU. I was forced to move out of it all. We built an addition at home to house my office-microscopy lab, and I have a small cubicle in the Deike Bldg. I lost the processing lab too, but they gave me use of a replacement facility that will be o. k. The really bad problem is the chaos, the huge blocks of time taken by the move itself, and not being able to find things. All of this has set me back months. At the moment I am working on a Penns./Perm problem in New Mexico. MS due in ten days.

Well, we join in wishing you all the best for 1999 and especially that you can sink some roots other than adventitious one of these days. In the future send us an end of the year greeting with some news so that we will be reminded to reciprocate.

The only significant travels in 1998 were that we spent Jan.-Feb. in Florida, and moved around quite a bit there and both coming and going--discovered some neat botanical gardens here and there (all over FL but also in Mississippi, TN and KY). Also, in Aug.-Sept. my Japanese colleague, Yoshi Hase, and his artist wife, were here for two weeks, and we showed them as much of the Northeast and adjacent Canada as possible--Niagara Falls, DC, Toronto, a cousin's vineyard in Ontario, Corning, NY (esp. glass museum), Phila., Delaware, Pittsburgh, etc. In the evenings I helped Yoshi convert his English-as-she-is-japped MSS into English--including one about Lake Baikal. Also the annual Spring and Fall visits to Insley Camp at Big Moose Lake.

All the best. Alfred

Hunt Institute for Botanical Documentation

Delivered-To: traverse@ems.psu.edu
Date: Tue, 29 Dec 1998 13:17:22 -0900
To: traverse@ems.PSU.EDU
From: ffsjf@aurora.alaska.edu
Subject: Hello from Alaska

Dear Alfred,

I hope that both you and Betty have had a good year and an enjoyable holiday season. Now that I'm writing, I realize I've been out of touch for awhile. It has been a busy summer/fall. We finished our first Mongolian field season in mid-August, and I began teaching Sedimentology at the end of that month. The semester went well, but I'm glad that I'll be teaching Earth History in the spring. It will be the first time I get to teach a course that I've taught once before. Hopefully that will give me enough time to begin counting Mongolian pollen.

I'm writing to ask, once again, for recommendations. There is still talk of a permanent position here, and the Dept. Chair has asked me more than once if I am interested. But since nothing concrete has materialized, I'm taking precautions and applying for jobs once again. Will you be available to write letters for me?

How are things in Pennsylvania? Have you been travelling much this year? Is there any chance that you will make it to Alaska this summer? You are, as always, most welcome.

Happy New Year.

Sarah

Dr. Sarah J. Fowell
Department of Geology and Geophysics
Box 755780
University of Alaska Fairbanks
Fairbanks, AK 99775
Phone: (907) 474-7810
Fax: 907 474 5163
e-mail: ffsjf@aurora.alaska.edu

Hunt Institute for Botanical Documentation

To: ffsjf@aurora.alaska.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: inquiry
Cc:
Bcc:
X-Attachments:

Hello there, Sarah!

Well, I haven't heard anything from you lately. I don't remember where we are on the question of a visit to Alaska. Betty put the kibosh on my idea of doing it in August--she has other things in mind. But I haven't given up by any means.

Now to the inquiry mentioned above. I just got an invitation from my friends in Japan who have been working on Lake Baikal palynology--you probably remember about them: Yoshitaka Hase and Akiko Iwauchi. They say that there is to be an international symposium on Baikal in Yokohama in early November of this year, and would I please attend and give a keynote address for the session on Paleoenvironment and Rift Basin History..

What do you think? Do you know anything about the symposium? Any other random thoughts? Yoshi and Akiko are good workers.

Best. I hope to hear from you soon, as I don't want to keep them hanging.

Alfred.

Hunt Institute for Botanical Documentation

To: ffsjf@aurora.alaska.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: work, etc.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Thanks for update of 20 instant (as they used to say in business letters).

You will recall that in my previous discussion of the situation that I said that the attitude of the department in Fairbanks was critical. If they really want you, as opposed to merely being able to tolerate the idea, it is a very good sign. UAK surely is a place that has more upside potential for you than ASU. I was NOT trying to push you into the latter job, but it did have certain security blanket features that had to be considered, not so?

How did you get the 6 mos. funding for each of the next three years? Marvellous.

Sure, you can make copies of any of my slides. But it would sure be nice if you could do the work of selection of same. Hmm. I'll do my best.

I VERY much want to visit you in Fairbanks--indeed, I wish I could figure out a way to continue scientific joint-work with you. However, the time frame you mention for this summer won't work. We are building an addition on our place in the Adirondacks (and also on our place here, but that is a separate story), and we must have June to spend in NY. When that is over we will need 1-2 weeks to get resettled at home--and by that time you will enroute to Mongolia. When will you be back? Does that offer some possibility, or will it then be too late in the season? Maybe we would fly to Anchorage, get a rent car and drive around a while, visiting you in F. among other things.

We have been amused, because we now have a friend in Fairbanks, that at this time of year there are days when it is colder in State College than it is in F.

All the best. Alfred.

Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Date: Fri, 20 Mar 1998 14:02:27 -0900
To: traverse@ems.psu.edu (Alfred Traverse)
Subject: Re: jobs

Hello Alfred,

I have accepted a position as research faculty here in Alaska, and turned down the offer at Appalachian State. I think this is a wise decision. The facilities here, which include an herbarium full of Asian plant species, are truly excellent. And it is likely that they will be hiring a palynologist in the next year or two. As always, however, this depends on money. The palynologist who left was only part-time in the geology department. She also taught biology courses. The geology department is trying to get a full-time position. If they do, I think I have a good chance at getting it, though I suppose it will depend somewhat on the other applicants. The chairman of the search committee strongly encouraged me to stay, however. I know that he would like to see me get the job. The rest of the department also seems pleased with my decision.

Since I have 6 months of funding per year for the next 3 years, research faculty is actually a good position for me. It means I can supplement my grant money by teaching 1 or 2 classes per year, if I want to. I'm hoping to offer a paleopalynology class next year. First I need to determine whether there are enough interested students. I suspect I can round up at least 6 (the necessary number) between geology and biology. If the class flies, might I be able to borrow some of your slides, to make copies for teaching? They have a good system of slide scanner and slide maker here, so making copies is relatively easy. It would be great if I could borrow some of your pictures of palynomorphs of all ages.

Thank you for your advice regarding my job offer. I considered the Appalachian State offer very seriously before rejecting it. If I weren't about to start a big NSF project, I would have accepted it immediately. But the teaching load there is double what I've been doing here, and less in my line of interest. I simply don't see when I would be able to get my research done.

I'm going to Mongolia again this summer for field work, but I will be here for most of June and the first week of July. Please come and visit if you can. I cannot speak from personal experience just yet, but Alaska is supposed to be beautiful in the summer!

Sarah

Hunt Institute for Botanical Documentation

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Hunt Institute for Botanical Documentation

To: ffskf@aurora.alaska.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: jobs
Cc:
Bcc:
X-Attachments:

Dear Sarah:

If you could get a job at Fairbanks that has some likelihood of permanence, that would be fine. After all, you would get a tenure track position at Appalachian, not tenure itself. I know from previous students (including Doug Nichols, long ago) that some small institutions can make it practically impossible for you to get tenure--heavy teaching loads, all sorts of departmental responsibilities--and nevertheless very lofty research expectations. I have no way of knowing that ASU is such a place.

However, wouldn't it be awful if you didn't take the ASU job, and then you didn't get the one in Fairbanks either? I assume you have discussed this in detail with persons in the Alaska department who would square with you. Do they know that you have this offer from ASU? Do they seem to care? That would tell me a lot.

Probably this is all too late in any case, as yesterday was your deadline. This is my first shot at the e-mail since return from Florida.

Best. Alfred.

Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Return-path: <ffsjf@aurora.alaska.edu>
To: bettyandal@juno.com (Alfred or Elizabeth I. Traverse)
Date: Wed, 4 Mar 1998 16:14:40 -0900
Subject: Re: job
Message-ID: <9803050111.AA28275@aurora.alaska.edu>
X-Status: Read

Hello Alfred,

I am moving closer to a decision about jobs. Appalachian State has certainly made me a good offer, and I like the people there. The main reason I was/am undecided is that the palynologist whom I've been replacing
here is not going to return. She had a part-time position, and the department is currently looking for one of the research institutions (probably the museum) to kick in a couple extra months of salary to make it
a full-time position. I think I'd have a good chance at the job, but things are moving slowly, and it will not be advertised or filled until next spring, at the earliest.

The lab facilities here are super, and there is an herbarium a block away.
So I've asked them to extend my position for another year. The Mongolia proposal that I wrote last year was funded, and it carries 6 months of salary/year for 3 years. If I get a reasonable offer here, I could spend 2
more years teaching and doing research. And I'd naturally apply for the permanent job. So, right now I'm waiting to here what Alaska has to offer
before I make a final decision.

I'll let you know what happens. Even if Alaska does offer me some salary,
there is no guarantee that I'll be able to stay here. I recognize that turning down Appalachian State would be a risky thing to do. On the other
hand, I think I could get more research done here, which I hope would net me another offer at a bigger school.

I am supposed to decide by Monday. It won't be easy.

Sarah

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Homepage: http://www.ldeo.columbia.edu/~sjf/mongo.html

Hunt Institute for Botanical Documentation

From: bettyandal
Full-Name: Alfred or Elizabeth I. Traverse
To: ffsjf@aurora.alaska.edu
Fcc: Sent
Date: Wed, 18 Feb 1998 08:40:14
Subject: job
Message-ID: <19980218.083852.7927.7.bettyandal@juno.com>
X-Status: Sent
X-Mailer: Juno 1.38

Hi, dear Sarah:

I think--in possession of far fewer facts than you, of course--that it would be a big mistake to reject the job at Appalachian State. Any port in a storm, I say. And you badly need teaching experience in a permanent job. I think that as a young woman investigator at a university that hasn't been much so honored, that you will get great grants. You should get one of the half million grants for women investigators, such as two of the women in our department have received.

One of the beauties of palynology is that you do it with very little equipment. You must have an excellent microscope with all accessory photo equipment. You must have access to an SEM. It would be unfortunate if you don't have an access to a hood, though (as I am sure you recall from 423) it is possible to get along without it. You need a couple of International clinical centrifuges, and preferably also a floor model.
Everthing but the SEM and the hood could be done within the scope of your $45,000.
As you may remember, I did quite good work at U. of Texas, even though I had to do my lab processing in what amounted to a barn, 10 miles from campus.
I would be happy to discuss this over the phone. 813-536-0187.

I think that going back to LD would not look good on your record--not as good as making a success of things at ASU for a few years.

All the best. Alfred

Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Return-path: <ffsjf@aurora.alaska.edu>
To: Bettyandal@juno.com
Date: Tue, 17 Feb 1998 14:21:14 -0900
Subject: job offer dilemma
Message-ID: <9802172318.AA23942@aurora.alaska.edu>
X-Status: Read

Hello Alfred,

Thanks again for writing recommendation letters (and answering phone calls)
for me. I have been offered the job at Appalachian State University. This
is very gratifying, but I am not sure that I will accept the position. At
present, the department doesn't have a functional lab. They are willing to
spend $45,000 to build one for me, but I don't know if that will cover it.
It is enough for fume hoods and basics, but I don't think it's enough to
create a lab from nothing (no centrifuges, no hoods, etc). I wouldn't be
so worried if my recent NSF grant had not been funded. But we begin field
work in Mongolia this summer, and I'm worried about the potential delays in
processing. Furthermore, the teaching load is greater than I thought. 2
new classes and 3 labs.

In summary, I'm still in negotiations, but I'm leaning toward turning the
job down. I worry about this, as it is risky to turn anything down in the
present climate. But I have invested lots of time already in the Mongolia
project, and I would hate to see it fail to take off (at least
palynologically) due to lack of time and money.

Do you have any advice for me? I could certainly use it. I very much like
the other faculty, but I'm hoping that the research project I'm about to
begin will get me a bigger, better offer somewhere. And I have 1.5 years
of funding, so I don't have to worry just yet. What do you think?

Sarah

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Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Return-path: <ffsjf@aurora.alaska.edu>
To: bettyandal@juno.com (Elizabeth I. Traverse)
Date: Wed, 14 Jan 1998 09:46:43 -0900
Subject: Re: names
Message-ID: <9801141844.AA03041@aurora.alaska.edu>
X-Status: Read

abbottrn@appstate.edu

also - e-mail to Sarah

Tone

Hello Alfred,

It's been so long since I spent more than 1 or 2 weeks at Penn State that I
really can't think of another good contact there, either. Dorothy Peteet at Lamont was on my committee, as you know, and would give a good report. Other committee members, such as Nick Christie-Blick, will also say nice things. Or you could suggest that they talk to Charlotte Schreiber. She did a great deal of work on evaporites in the Newark basin cores. She has
since retired, but I notice she has an adjunct position at ASU. I didn't work closely with her, but she'll certainly remember me.

The car was doing fine until it hit -40 last week. I have a block heater,
but it still wouldn't start. I had to have it towed to a local garage, where they installed a battery heater _and_ an oil pan heater. The latter
is the most important, second to the block heater. It seems my engine was
warm, but the oil wouldn't flow.

Sarah

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Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Return-path: <ffsjf@aurora.alaska.edu>
To: traverse@ems.psu.edu (Alfred Traverse)
Date: Mon, 12 Jan 1998 14:43:50 -0900
Subject: reference
Message-ID: <9801122341.AA13440@aurora.alaska.edu>
X-Status: Read

Hello Alfred,

Just to alert you, the folks from Appalachian State University will be calling you sometime this week for a reference. I'm on the short list. This is a fairly small undergrad institution that I'm quite interested in.
The faculty appears to be fairly productive, undergraduate research is strongly encouraged, and I'd be back on the east coast. Or very nearly. It doesn't hurt that they are looking for someone to help teach field camp
- in Italy. I've applied for the paleontology position (they're filling 3
positions right now).

Thanks for continuing to write letters/answer phone calls for me. I hope you are enjoying your time in Florida.

Sarah

Here's a copy of the job announcement :
APPALACHIAN STATE UNIVERSITY
PALEONTOLOGIST
The Department of Geology invites applications for a tenure-track, assistant professor position as a paleontologist. the successful applicant
must hold the Ph.D. degree, be keenly interested in undergraduate instruction , and must have a record of published research. Preference will be given to candidates with one or more of the following qualifications: expertise in invertebrate paleontology, an interest in involving undergraduates in research, field experience, and an interest in
participating in teaching summer field camp in Italy. The starting date is
Aug. 17, 1998.

Appalachian State University is a comprehensive university and a member of
the University of North Carolina system. The Department of Geology offers
undergraduate degress (BA, BS) in geology, geology with a concentration in
environmental science, geology with a concentration in sustainable development, and geology/earth science education.

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Homepage: http://www.ldeo.columbia.edu/~sjf/mongo.html

Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Return-path: <ffsjf@aurora.alaska.edu>
To: bettyandal@juno.com (Elizabeth I. Traverse)
Date: Tue, 13 Jan 1998 11:35:27 -0900
Subject: Re: ASU, etc.
Message-ID: <9801132033.AA29509@aurora.alaska.edu>
X-Status: Read

Hello Alfred,

Life in Florida sounds wonderful. You say Betty found a bike? How lucky!
I always find it very strange to be in a house without bookshelves. What do such people do all day?

I thought of something else you might want to know before you talk to the folks from ASU (if you haven't already). They mentioned that they will ask
some or all of my referees for an additional reference to call. It's supposed to be someone that I haven't suggested, so I won't make suggestions. But I thought it might help you to know that the list of referees I sent included you, Paul Olsen, and Paul Layer (dept. chair here
in Alaska).

Thanks for providing yet another recommendation!

Sarah

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Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Date: Tue, 16 Dec 1997 14:40:28 -0900
To: traverse@ems.PSU.EDU

Hello Alfred,

Yesterday I received your terrific Christas photo and letter, but I have been too busy calculating grades to respond until now. Thanks so much for the picture. You two managed to cover alot of ground last year. I didn't realize that Betty had published a book on her thesis. That's very impressive. Please congratulate her for me!

The temperatures have been unusually warm so far. Supposedly this is because of El Nino. Yesterday, however, it dropped to -20 and stayed there. I'm told to anticipate -40 in January. But you're right, it's no colder than Grand Fork. Nor colder than Wisconsin. I remember -70 (with wind chill) most winters when I was growing up. I try to explain to people here that I'm used to the cold temperatures due to my Wisconsin upbringing. But they don't like it when they hear that temperatures in the lower 48 are just as cold. I think people here like the idea that they are surviving the worst winters in America.

Did I send you a note to tell you that Bruce's thesis arrived. I think I did, but now I can't remember if I actually sent it or if I just meant to send it. Things got a bit hectic here at semester's end.

Merry Christmas to you and to Betty.
Here we are eagerly anticipating the solstice as a cause for celebration. Just one more week (actually, 5 days) and we begin to gain daylight again.

Sarah

Dr. Sarah J. Fowell
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Hunt Institute for Botanical Documentation

To: ffsjf@aurora.alaska.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: books, etc.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

The answer to the attendance problem would seem to be a flophouse type dorm on campus where students could spend the night when weather, etc., creates problems--like our condo is for us (except ours is reasonably luxurious and becoming more so). Another idea would be TV connection to each residence via the university's TV facilities. THAT seems best to me. Shouldn't be impossible. In fact, I've seen TV shows implying that grade and high school education in Alaska is done exactly that way. Why not to some extent at a university? With some sort of absolutely REQUIRED minimal personal actual attendance.

OK, all I need is an appropriate box, and it will become SJFowell Box 3 of 3, publications. Some of the things, like the two Potonie volumes, are quite rare.

I guess you meant in the other message that I'll be getting recommendation requests from Appalachian. I bet Boone, NC, is a nice place. There's a town west of Binghamton, NY, with the name Appalachin (sic), to give you an idea of how big the "Appalachians" are! It would be nice to have you within a day's drive again.

Best. Alfred.

Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Date: Wed, 26 Nov 1997 11:46:31 -0900
To: traverse@ems.psu.edu (Alfred Traverse)
Subject: Re: books, etc.

Hello Alfred,

The references you have selected for me look terrific. Yes, I want them. Many of the Russian references are particularly had to come by. Thanks so much!

I had reasonably good attendance for my class this morning. The problems in Alaska are a bit different, since it's expensive to go anywhere for the weekend. However, low attendance on a weekly basis is unfortunately the norm. Many students live off campus, it's dark, cars don't start, etc. I've been part of several discussions as to what can be done about this, but nobody seems to have a good solution.

Happy Thanksgiving.

Sarah

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Homepage: http://www.ldeo.columbia.edu/~sjf/mongo.html

Hunt Institute for Botanical Documentation

To: ffsjf@aurora.alaska.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: books, etc.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Yours re wanting to go to Baja has been read. Already?

In the course of trying to consolidate my remaining space, I am getting rid of extra copies of things.

Here are some books I bought on a trip to Russia a while back, but turn out to have copies already. (Malyavkina 1949--where Corollina was originally published, among other things, I have already put in one of your two boxes at our condo storage area.)

If you want these things, they'll go in another box at the Condo: Sarah Fowell books, box 3 of 3.

Viz.: 1. Sporae Pteridophytorum Sinicorum. 1976. This is a 450 page picture book of the modern spores of China. Very useful for identifications of extant and Cenozoic spores. The descriptions, etc., are in Chinese, but the names are Latin, and the pictures are international.

2. Boitsova, E. P. 1956. Atlas of Miocene Spore-Pollen Complexes of ...USSR. in Russian.] Tables and Plates are international. With a dictionary and ability to read Cyrillic letters (you can learn in 1 hr.) and knowledge of palynology, one can read a remarkable amount of such stuff.

3. Bolkhovitina, N. A., Editor, 1973. Morphology and systematics of fossil spores and pollen. Proc. Third Int. Palynol. Conf. [in Russian and English] Contains a small group of interesting papers on various topics, such as Norman Hughes on spore classification, and by Kuvaeva on schizaeaceous spores of Mesozoic.

4. Ado, A. D., Editor, 1973.[In Russian and English] Palynology in medicine. Proc. 3rd. Int. Palynol. Conf. All about pollinosis. Interesting pollen calendars.

5. Kupriyanova, L. A., Editor, 1973. Pollen and spore morphology of recent plants. Proc. 3rd Int. Palynol. Conf. [in English and Russian] Wide range of pollen morphology papers. Nicely illustrated.

6. Khotinskii, N. A. & E. V. Koreneva, Editors. Palynology of the Holocene and marine palynology. [in Russian, English and German]. Proc. 3rd Int. Palynol. Conf. Wide range of papers--peat bogs in Bulgaria, pollen analysis from Moravian steppes, etc.

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7. Potonie, R., et al. 1934. Zur Mikrobotanik der Kohlen und ihrer Verwandten, Vol. 4. This is one of Potonie's pioneer publications. Source of some of his names.

8. Ditto, Vol. 5.

9. Glover, J. E. & G. Playford, 1973. Mesozoic and Cainozoic Palynology. Essays in honour of Isabel Cookson. Geol. Soc. Austral. Spec. Pub. 4. Contains some good papers by de Jersey, Dettmann, etc.

10. Malyavkina, V. S., 1964. Spores and pollen from Triassic deposits of western Siberian depression. Trudy VNIGRI No. 231. [in Russian]
Whatever you think of Malyavkina, her work was pioneering and imporant.

11. Zaklinskaya, E. D., Ed. 1973. The palynology of the Cenophytic. Proc. 3rd. Int. Palynol. Conf. (in English, Russian and German) Some very useful illustrations: plates, distribution and stratigraphic charts, etc.

12. Scheuring, B. W., 1978. Mikrofloren aus den Meridekalken des Mte. San Giorgio...Schweiz. Paläont. Abhandl. Vol. 100. You know all about this one.

13. Neishtadt, M. I., Ed., 1973, Problems of palynology. Proc. 3rd Int. Palynol. Conf. Wide range of papers, including one on sporopollenin by Brook, another by Samoilovich et al. on a vegetation map for Siberia for the Mesozoic and Cenozoic. Etc. [in Russian and English]

14. Ananova, E. N., 1974. Pollen in Neogene deposits of the southern Russian platform. Leningrad. [in Russian]

15. Grichuk, V. P., Ed., 1973. Palynology of the Pleistocene and Pliocene. Proc. 3rd Int. Palynol. Conf. [in Russian, English, and other languages.] There are lots of papers in here that bear on your eastern Asia work.

16. Samoilovich, S. P., Ed., 1971. Palynology in Oil Geology. Trudy VNIGRI No. 298. [Russian w. English abstracts] Various papers on various topics related to oil exploration and development. Quite a bit of stratigraphy with interesting plates.

17. Bolkhovitina, N. A., 1953. Spore-pollen characteristics of Cretaceous deposits of the central departments of the USSR. Trudy Inst. Geol. Science No. 145. [in Russian] This was a very early treatise on K sporomorphs. The nomenclature seems odd to us, but this is still an instructive thing.

18. Bolkhovitina, N. A., 1956. Atlas of spores and pollen from Jurassic and Lower Cretaceous deposits of the Viliyusk [Yakutsk Rep.] basin. Trudy Geol. Inst. no. 2. [in Russian] One of the classic pubs., even though now very out of date.

19. Surova, T. G., 1975. Electron microscopic investigation of pollen and spores of

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plants. Council of Botanical Gardens, Geographical Inst., Nauka, Moscow. [in Russian] Lots of fairly good SEMs of pollen.

O. K.--you want 'em? Let me know because I don't want to sort 'em again.

Hope you have a nice T. break. PSU might as well give the students the week off, because they take it anyway.

Best. Alfred.

Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Date: Wed, 26 Nov 1997 10:33:19 -0900
To: traverse@ems.psu.edu (Alfred Traverse)
Subject: thesis has arrived

Hello Alfred,

Mere hours after I notified you that Bruce's thesis had not yet arrived, both volumes appeared in my mailbox. Thanks so much for sending it. It's a pretty good copy, even with xeroxed plates. And it's much easier to handle in 2 volumes. So nice to finally have a copy of my own!

Yesterday I mailed the first of this year's job applications. I've applied for a paleontology job at Appalachian State University.

Thanks again for the thesis.

Sarah

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Homepage: http://www.ldeo.columbia.edu/~sjf/mongo.html

Hunt Institute for Botanical Documentation

To: ffsjf@aurora.alaska.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: recs.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Of course, I am more than willing to write letters, etc., for you. Your experience in Fairbanks is going to help the campaign a lot.

I am having this e-mail address forwarded to our place in Florida when we leave here at Xmas time. It will stay forwarded there until we come back in early March. So, you can use this address. If you'd rather, you can just use the address to which it will be forwarded: Bettyandal@juno.com
We always take our laptop with modem on trips.

Our daughter, Martha, will be forwarding all office mail to us down there also.

However, if for some reason you need the actual address and phone no. for the period 1 Jan.-28 Feb.:

Embassy Mobile Park
16416 US19N
Lot 509, 5th St.
Clearwater, FL 33764 Phone: 813-536-0187 (which is listed in the owner's name: Dorothy Power-Lawson)

It is amusing to contemplate the contrast betwen your situation and ours for Jan.-Feb. We will have our own grapefruit tree loaded with fruit, etc.

All the best.

Alfred.

P. S. Did you ever get the thesis I sent? I don't think I heard.

Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Date: Tue, 25 Nov 1997 11:14:06 -0900
To: traverse@ems.psu.edu (Alfred Traverse)
Subject: Re: recs.

Hello Alfred,

Thanks for the temporary address and phone. I'll put the phone number in with my application, but I'll suggest that they contact you by e-mail.

I haven't received the thesis yet, but this is not unusual. Alaskan mail is _very_ slow. Thanks for sending it, and I'll let you know when it arrives.

Alaska is beautiful, but I do envy your trip to Florida. If I can get my current proposal done on time, I'm contemplating a trip to Baja the first week of January. I'd like a little sun and some warmer temperatures for awhile.

Happy Thanksgiving,

Sarah

Dr. Sarah J. Fowell
Department of Geology and Geophysics
P.O. Box 755780
University of Alaska Fairbanks
Fairbanks, AK 99775
Phone: (907) 474-7810
Fax: 907 474 5163
e-mail: ffsjf@aurora.alaska.edu
Homepage: http://www.ldeo.columbia.edu/~sjf/mongo.html

Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Date: Sun, 23 Nov 1997 13:01:45 -0900
To: traverse@ems.PSU.EDU
Subject: references (again)

Hello Alfred,

I am once again applying for jobs. The first of my applications will be sent off next week. I very much appreciate your efforts on my behalf last year, and I hope that you will continue to write references for me. I know that many have been required so far, but I hope this means I am close to landing a tenure-track position. I realize that you will be away December through March or so. Do you have an address and phone number where you can be reached, assuming that you are willing to continue to write letters for me? I have your e-mail address, but I might need to provide more contact information.

Thanks very much for all the letters you've written so far.

Sarah

Dr. Sarah J. Fowell
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Phone: (907) 474-7810
Fax: 907 474 5163
e-mail: ffsjf@aurora.alaska.edu
Homepage: http://www.ldeo.columbia.edu/~sjf/mongo.html

Hunt Institute for Botanical Documentation

To: ffsjf@aurora.alaska.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: book
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Just went to Regency Square and retrieved the Cornet thesis from one of your boxes (they are labelled: Sarah Fowell Pubs., Box 1 of 2; Box 2 of 2).
Resealed said box. Came back to Deike and packaged the thesis--it is in two volumes, so there are two packages (pkg. 1 of 2, pkg. 2 of 2). Just mailed off to you.

Please let me know when the pkgs. have both come. It will be interesting as a test case.

I peeked, and can say that the plates aren't so bad after all. I wouldn't be surprised if 423 students have scribbled here and there. They were BAD about that!

It's fun to hear from you. Best. Alfred.

Hunt Institute for Botanical Documentation

To: ffsjf@aurora.alaska.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: thesis
Cc:
Bcc:
X-Attachments:

Dear Sarah:

I guess I didn't tell you we were going to Germany? We are just in this morning (haven't been home yet). Yours of 16 Oct. (day after we left the office) is the second of many that came while we were gone.

As I recall telling you, I have stored that copy of the BC thesis in the storage room we have in the basement of the building where our local apartment is. I should tell you that it is a xerox copy in which the plates are at best fair. It was my loaner copy for 423. The text is fine. But maybe Paul would be unhappy with the trade? I will await your instructions on that. It is no "simpler" to send it to Paul than to send it to you, however. AK is still in the union, and the postage will be paid by PSU. We will just wrap it up and send it wherever you like.

I'm glad you're having fun up there. Keep me posted on the research. I look forward to seeing you one of these days.

Best. Alfred.

Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Date: Tue, 4 Nov 1997 10:32:06 -0900
To: traverse@ems.psu.edu (Alfred Traverse)
Subject: Re: thesis

Hello Alfred,

Glad to hear from you. How was Germany? Where did you go? I hope you enjoyed the trip.

I suspect you are right that Paul would not appreciate trading his copy of Bruce's thesis for a xerox. I'll mail Paul's copy back to him. Please do mail the xerox to me when you have time. No rush. Right now my time is filled with teaching a preparing another Mongolia-related proposal.

Best to you and to Betty,

Sarah

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Fairbanks, AK 99775
Phone: (907) 474-7810
Fax: 907 474 5163
e-mail: ffsjf@aurora.alaska.edu
Homepage: http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Date: Thu, 16 Oct 1997 13:12:45 -0800
To: traverse@ems.psu.edu
Subject: copy of Bruce's thesis

Hello Alfred,

How are things in Pennsylvania? I hear there has been a warm fall throughout the lowe 48. It began snowing here two weeks ago. Most of it has melted, but the temperatures are now cold enough to maintain snow cover. I'm hoping it snows again soon so that I can get my skis out. Might as well make the best of the local conditions.

I am wondering if you are able to easily lay hands on the copy of Bruce's thesis that you have said you would save for me. If so, I'd like you to send it to Paul. The reason is this - I have Paul's copy, and he needs it. It seems simpler for you to send the extra copy to Paul, if possible, rather than for me to send Paul a copy from AK and for you to send a copy _to_ AK. Please let me know if you can't easily get to it, and I'll send Paul my copy after all. Just thought I'd try a more direct mailing path first.

So far I am very much enjoying working here. Teaching is demanding but (mostly) fun, and I'm finally getting organized enough to get some research done.

Sarah

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Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Date: Tue, 19 Aug 1997 17:38:06 -0800
To: traverse@ems.psu.edu (Alfred Traverse)
Subject: mail forwarding

Dear Alfred,

Using telnet, or any other such long-distance-login method, will result in high phone bills if you are using a personal computer. Here I've been connecting via one of the university machines to avoid such costs. However, now that I have a new address, I'm having my Lamont mail automatically forwarded to me. I think you could do this as well. It involves putting a .forward (pronounced "dot forward") file into your home directory on your Sun computer account. Basically, this consists of a file named ".forward" which contains only the text of your new address. You can either have someone who is familiar with unix do this for you on the sun, or you can ftp the .forward file from your own computer to the sun. Do you know how to ftp things between your computer and your sun account? If so, this is the easiest thing to do. If not, go and find that person familiar with unix. You don't want to place the file into your account until just before you leave, because it will immediately start forwarding your mail. When you get back, you just remove the entire file from your Sun directory and it will stop forwarding your mail.

Good luck.

Sarah

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Fairbanks, AK 99775
Phone: (907) 474-7810
Fax: 907 474 5163
e-mail: ffsjf@aurora.alaska.edu
Homepage: http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

To: ffsjf@aurora.alaska.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: telnet, etc.

Dear Sarah:

Well, I'll be darned. It really IS Ideo. Stupid change. Geological better description than "earth." For example, it specifically excludes Mars, tho' geological long since ceased to be tied to "geos."

When we go to Florida for Jan.&Feb. we will have our laptop with modem. From the mobile park where we'll be it should be easy to send and receive e-mail, but how could we read our mail here at PSU? I mean, I know a cumbersome method, but it involves a long distance phone bill for each such usage. Better idea?

Discombobulation of the move is now mostly behind me, and I'm getting back to work.

Cheers. Alfred.

Hunt Institute for Botanical Documentation

From: ffsjf@aurora.alaska.edu
Date: Mon, 18 Aug 1997 11:31:30 -0800
To: traverse@ems.psu.edu (Alfred Traverse)
Subject: Re: contact, etc.

Hello Alfred,

sjf@ldeo.columbia.edu is the correct address. We are now the "Lamont-Doherty Earth Observatory." Silly name change if you ask me, but that's what the powers decided to do.

I can use telnet to read my mail in my Lamont account. And now that I have an address in AK, I'm going to put a file into my Lamont directory that will forward all incoming mail.

Best,

Sarah

Dr. Sarah J. Fowell
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Phone: (907) 474-7810
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Hunt Institute for Botanical Documentation

Date: Fri, 15 Aug 1997 14:38:41 -0800
X-Sender: ffsjf@aurora.alaska.edu (Unverified)
To: andrea@cobra.jpl.nasa.gov, nanarens@socrates.berkeley.edu,
mcuomo@wesleyan.edu, fjenkins@oeb.harvard.edu,
fengzd@saturn.montclair.edu, kashgarian1@llnl.gov,
clowe@life.bio.sunysb.edu, peck@palmag.gso.uri.edu,
traverse@ems.psu.edu, pzippi@arco.com, polsen@ldeo.columbia.edu,
dts@ldeo.columbia.edu, mia@ldeo.columbia.edu
From: ffsjf@aurora.alaska.edu (Sarah J. Fowell)

Hello folks,

Just to let you know, my new e-mail address is: ffsjf@aurora.alaska.edu
To those of you to whom I gave an office number, please not that it is
WRONG. My real office number is: (907) 474-7810.

Sarah

Dr. Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Phone: (914) 365-8709
Fax: 914 365-8154
http://www.ldeo.columbia.edu/~sjf/mongo.html

8/11/97 - 5/23/98
Department of Geology and Geophysics
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Fairbanks, AK 99775
(907) 474-7801

Hunt Institute for Botanical Documentation

From: sjf@lamont.ldgo.columbia.edu (sarah fowell)
Date: Thu, 14 Aug 97 14:30:29 EDT
To: traverse@ems.psu.edu
Subject: Re: publications

Hello Alfred,

Thanks for the information about the pubs.

I arrived in AK Monday. Currently I am preparing labs/lectures for this fall's paleo class and trying to find a place to live. Please note that the phone number that I sent to you (and many others) is incorrect. The correct number
is (907) 474-7810. The number I gave you before has the last two digits
reversed.

My Lamont address is sjf@ldeo.columbia.edu. The old address had "lamont" in
it, and I think it will still work, but the new version is shorter.

I still don't have an e-mail account here. Hopefully later this week.

Thanks again for reserving papers/books/reprints for me.

Sarah

how did she send
e-mail from ldgo?
(not ldgo)

Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: publications
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Is "lamont" a part of your e-mail address or not? It's on my card to you and seems to work, but the version without it appears on the current missive from you and has before. Hmmmm. I'd like to have it right.

Since I communicated about the pubs. MANY more have appeared and the whole thing is in two largish boxes. For the record (be sure to print this out), in case something should "happen" to me, the boxes will be in the storage room we have at the condo--it's in the basement. The boxes will be clearly labelled with your name. I am glad to have an excuse for you to come here!

I think the drive to AK is unlikely unless you stay a little beyond 1 June--but I suppose that could happen, huh?

All the best for your trip and for next year. Alfred.

Hunt Institute for Botanical Documentation

Date: Tue, 5 Aug 97 18:01:22 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah J. Fowell)
Subject: Re: books again

Dear Alfred,

Thank you very much for your congratulatory e-mail. I'm truly very thrilled about the Alaska job. Their paly labs and scopes are excellent, and I'm very much looking forward to working with the students.

I would be very grateful if you would hold on to those papers/books/reprints that would be useful to me. I fear that if you send them to me in AK, I'll just have to move them in 9 months. But if you are able to store them until I land a permanent job (a matter of a year or two, I hope), please do so. I do not have a copy of Tshudy and Scott, and would very much like to own one. And the copy of Cornet's thesis that I've been using actually belongs to Paul. So please set that aside for me as well.

I'd be happy to have you visit me in AK at any time. Naturally, the summer is best. But the weather might be acceptable (and the roads passable) as early as late May. I'll ask around and let you know. Also, it's possible that my "last day" may change somewhat between now and June '98. If I stay a bit longer, you'd be more than welcome to make the drive.

Sarah

Dr. Sarah J. Fowell
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Phone: (914) 365-8709
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http://www.ldeo.columbia.edu/~sjf/mongo.html

8/11/97 - 5/23/98
Department of Geology and Geophysics
P.O. Box 755780
University of Alaska Fairbanks
Fairbanks, AK 99775
(907) 474-7801

Hunt Institute for Botanical Documentation

To: sjf@lamont.ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: books & reprints
Cc:
Bcc:
X-Attachments:

Dear Sarah:

There is a little problem about your move that has just emerged. Because of this dratted contraction of my space, we are having to be very hard-hearted about throwing things out or otherwise disposing of them. For example, there is the literature that I used to put out in 418 for the class--copies of theses, publications of mine, etc. It's quite a stack of stuff and would be a nice addition to your library. But you don't want things like that being shipped to you at this juncture, do you? We have no place to store them here, I guess. Well, I could put them in a box with your name on it and put it in our storage area at the condo. Are you driving to Alaska?
If so, presumably via I-80 and you go fairly near? But maybe you aren't dragging your library to Alaska? Other suggestions?

What about items that come up during your absence--will there be an SJF bin at LDGO into which they could be dumped? Are you retaining an office there? Etc.

Best. Alfred.

Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: congratulations!
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Well, on the one hand, rats!--you won't be coming here in anything like the near future.

On the other hand, a big hug and congratulations! You're on your way. I know that it's only one year, but it's a foot in the door and gives you proof that you can handle it. I am sure that you will get a permanent job one of these days. I will write as many ga-ga letters as you like.

Jeez, I've always wanted to visit Alaska. Maybe before you leave next Spring (do they have one in Fairbanks?) we can dream up a reason for me to visit you UP THERE? I'm serious. Might give me an excuse to buy my camper and drive the Alaska Highway. But I guess 1 June is too soon? And that is your LAST DAY.

Actually, I was about to contact you to have us postpone your visit here for a few weeks because the department head visited me a week ago and told me that I had to vacate the microscopy room. Our grandson, Guy, came up from Camp Hill and worked for me three days, as we effected the move. I was only two weeks post-operative from carpal tunnel surgery, so it has been a bit painful for me in physical as well as emotional points of view. There is no longer a visitor's room, and the scopes are a bit crowded in 435-435A, but it is workable, and you are still very welcome, as soon as I can get settled in--as you know, moving is one thing, and getting settled in is quite another story. There are piles of stuff everywhere.

I may have told you that I am having an addition put on our home in the country to provide a work space when they also take away rooms 435-435A, which they inevitably will. There is contractual agreement to let me have the wet lab and these two rooms until Jan., 1999--but there are no guarantees beyond that.

U. Alaska sounds great. I am so happy for you.

Cordially. Alfred.

Hunt Institute for Botanical Documentation

Date: Fri, 1 Aug 97 14:04:39 EDT
To: traverse@ems.psu.edu
From: sjf@ldgo.columbia.edu (Sarah J. Fowell)
Subject: Alaska

Hello Alfred,

I fear we will have to change our tentative plans to get together this month. I have recently accepted a 1-year visiting assistant professorship at the University of Alaska Fairbanks. The movers come on Saturday and I depart on the 11th. I regret that I will not be able to visit you this fall, but I am very excited about the position. The palynological labs and scopes at UAF are excellent, and there is an herbarium full of Asian species. Furthermore, I'll finally get some full-blown teaching experience. I teach paleo in the fall, earth history and limnology/paleoclimate in the spring.

Thanks so much for the many letters you wrote for me this year. I fear it's not over yet, however. I'll continue to apply for permanent positions while I'm in Alaska. If nothing comes through, I'll return to Lamont in June to get ready for another field season in Mongolia.

I'll be in Alaska from 8/11/97-6/1/98. You can still reach me at this e-mail address, or at the mailing address or phone number below.

Sarah Fowell
Department of Geology and Geophysics
PO Box 755780
University of Alaska Fairbanks
Fairbanks, AK 99775

(907) 474-7801 (W)

That's all I know for now. Sorry again that I won't be seeing you this month.

Sarah

Dr. Sarah J. Fowell
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Phone: (914) 365-8709
Fax: 914 365-8154
Homepage: http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: cf.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Cf. stands for confer, meaning to compare, being the imperative form of the Latin verb for to compare.

A while back I had a message from Norm Fredriksen about the nomenclatural use of it. The question was, which indicates closer relationship, cf. or aff.? In my opinion, cf. is closer--means the writer is not quite sure that's what it is, but it's pretty close, whereas aff. means "somewhat reminiscent of."

Today it's actually cool here--about 75 F. for a high. It has been very warm but nothing like last year at this time--or was it two years ago.? I mean, the Arts Festival is on, it's always the same week, and on that occasion it was (I am not making this up) l05 F.--highest temp. ever recorded here. We've had another air conditioner put in at the condo--contractor did a nice job of modifying the balcony door to accommodate it, and it's nice there no matter. We'll be there tonight because we'll have Jason, whose mother is doing something theatrical in connection with the Festival.

At Alphabet Arboretum the problem is aridity. 3 inch deficit of precip. so far this year. I'm watering the 39 trees I planted this spring.

See you. Alfred.

Hunt Institute for Botanical Documentation

Date: Thu, 10 Jul 97 15:51:26 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah J. Fowell)
Subject: cf.?

Dear Alfred,

I have a question that I'm sure you will be able to answer. In fact, I'm embarassed that I don't know the answer myself. The question is this: What does the abbreviation cf. stand for? As an abbreviation, I know what it means and how it should be used. But I don't know what the abbreviated word is. My student just asked me and I had to admit ignorance. But I promised her I'd find out. I guess this is one of the things students are really good for. She keeps me on my toes.

My August schedule is a bit up in the air right now, but I'll let you know as soon as things settle down. Then we should set aside time to push forward with the Martin Head material.

Hope it's cooler and drier in Pennsylvania than it is here.

Sarah

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Lamont-Doherty Earth Observatory
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Phone: (914) 365-8709
Fax: 914 365-8154
Homepage: http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

Date: Mon, 30 Jun 97 11:55:54 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah J. Fowell)
Subject: Re: ref.

Dear Alfred,

Feel free to quote the Pangea Project paper. It's a pretty good summary of my work on the Tr/J boundary and Bruce's cyclicity data. My only regret is that it wound up in a meeting volume. But please cite it. Maybe that will encourage a few more people to read it.

My summer intern is here until August 6. We're working pretty hard on samples I collected in Mongolia last fall. Consequently, I think I would prefer to postpone a visit until August. Could you please tell me (again, I think) what your August schedule is like?

Hope you are having a pleasant summer.

Sarah

Dr. Sarah J. Fowell
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Phone: (914) 365-8709
Fax: 914 365-8154
Homepage: http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: visit, ref., etc.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

"None HAS...." No charge for these little corrections. But I am very disapppointed that you were no better than second--but, heck, given the number of applicants, that is pretty good. Word will get around. Somebody who is always finishing second will win one of these tournaments.

Re the cycles paper I wanted--I found Fowell, et al., 1992--paper from the Pangea workshop. Trouble is, that isn't a "real" publication. If you did some sort of really published paper with Paul and or others that mentions the cyclic business, I could quote that instead. But not if you don't think it amounts to much. I remember that Bruce was very high on the idea.

Reunion was huge fun. We also had a couple of nice days in Boston before the reunion.

Surgery is for carpel tunnel syndrome. I had the right wrist and hand "done" 20 years ago. It should be no big deal. But I am almost 72, and there is risk with all surgery.

The surgery is for 15 July. We have no travel plans until late September after we get back from the Adirondacks, for which we depart in about ten minutes.

All the best. Keep applying! Alfred.

Hunt Institute for Botanical Documentation

Date: Fri, 13 Jun 97 14:21:30 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah J. Fowell)
Subject: Re: re-connect

Hello Alfred,

So nice to hear from you. I have been thinking or you recently, also. Mainly because I am hoping that we can arrange a time to get together this summer and do a bit more work on the New Brunswick material. I have a summer student working with me until August 6, but I could probably get away for a couple days in mid-late July, if that would work for you.

None of the job applications have worked out. I did have 4 interviews, and I came in second for at least 2 of those jobs. I still haven't gotten feedback from UNH. So, I'm coming close, but that isn't good enough for today's job market. Right at this moment I am preparing an application for a 1-year sabbatical replacement at U. Alaska-Fairbanks. I would like to go there because they have a good paly/sed lab, and a herbarium full of Russian specimens. I would also gain some experience teaching paleontology and earth history. I suspect that they will ask you for a reference, though of course I can't be sure.

I did attempt to document cycles in the pollen record of the Newark basin, but I was somewhat thwarted by the lack of pollen in the drier parts of the cycles. What I found was that pollen was preserved when it was wet, and probably oxidized when it was dry. Chapter 4 of my thesis summarizes my forays in that direction.

Hope your reunion was enjoyable. Why do you need surgery? May you heal quickly.

Sarah

Dr. Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Phone: (914) 365-8709
Fax: 914 365-8154
Homepage: http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

To: sjf@lamont.ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: re-connect
Cc:
Bcc:
X-Attachments:

Dear Sarah:

You still there?

Have been reminded of you two ways today. First, I am doing a little paper on paleoecological uses of palynology and was reminded of your neat study of the long cores from New Jersey, re evidence of repeated climatic cycles. I thought I had a reprint or something--where do I look for a citable reference?

Secondly, I am just back from my 50th reunion (of the class of 1947) at Harvard. One afternoon I took off from the festivities and went to the herbarium to check the sheets for my 351 and 352--you may recall that you discovered that the one that says Pinus is Picea and vice versa. The sheets are o. k., and I could still see where I took polleniferous material in the summer of 1948. Ye gods. I just had Betty make more slides from the residues. They are also o. k. So, the slides were somehow reversed before labelling. I did less well on another problem--a tropical species from Panama didn't agree with the same species I obtained from Smithsonian last year when I noticed that the Harvard material didn't match with illustrations in the literature. The sheet I sampled in 1948 was no longer anywhere to be found. Obviously, somebody noted that it was NOT Hippocratea and reclassified it. The H. herbarium is at the 7 million level now, and though the 40K type sheets are in the computer, the rest of the herbarium isn't. Once a sheet is moved, it's history.

We are now getting packed to go to the Adirondacks for a week or so--to visit our place. A cousin from Montreal is coming down to visit.

On 15 July I have surgery on my hand/arm, but it shouldn't trouble me more than a few days. After that we have no travel plans or whatever until October, when we'll spend another week in the Adirondacks and three weeks in Germany.

Let me hear from you about the paper to cite. It will be good to know you are still viable (I hope!). None of the job applications worked out?

Best. Alfred.

Hunt Institute for Botanical Documentation

To: trexler@mines.unr.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: Sarah Fowell
Cc:
Bcc:
X-Attachments:

Dear Dr. Trexler:

I am just in the office again after an absence (in Italy) of about a month. I find your e-mail message of 14 April among the hundreds of accumulated missives. This accounts for my seeming neglect of an important matter.

The fax machine for this department is used by dozens of faculty members and is very public. I don't like using it for sensitive matters such as recommendations. What I propose to do is to give you a short precis here and hand carry a snail-mail letter to the post office--you should get it by Monday or Tuesday, I would think.

Dr. Sarah Fowell is an absolutely top individual, and it would be a shame if my failure to get a recommendation to you prevented you from offering her a position.

In brief, I have known Sarah for quite a while. She spent two semesters in my lab when she was working on her dissertation at Columbia (Lamont-Doherty), as they did not have a palynologist, and her project involved much use of palynology. I was therefore on her committee and consider her one of my doctoral products, though officially she was a student of Paul Olsen, a vertebrate paleontologist at Columbia.

One one occasion Ms. Fowell took over my class for three weeks while I was in Spain, and she lectured and did lab demonstrations on several other occasions when she has been here. She comes fairly often to use my lab and library--most recently for a week last semester.

Sarah is a dynamic, hard-working, imaginative woman. She is very productive of research results and has impressed me greatly with her resourcefulness. She appears small and delicate, but obviously is tough because she has led field parties under trying conditions in various parts of the world, most recently just a few months ago in Mongolia. She is a good teacher (I know from her help with my classes) and is well-liked by students and faculty alike.

Dr. Fowell has a proven track record in fund-raising, at Lamont-Doherty.

Sarah has experience in both palynology and megafossil paleobotany, as well as in vertebrate and invertebrate paleontology-proper. She is also a very well qualified sedimentologist.

From my long connection with this young woman, I am convinced that you are very unlikely to find a better candidate for your position.

Yours very truly,

Hunt Institute for Botanical Documentation

Alfred Traverse, Professor Emeritus of Palynology

Hunt Institute for Botanical Documentation

Date: Mon, 14 Apr 1997 15:34:23 -0700
From: Jim Trexler <trexler@mines.unr.edu>
Subject: Sarah Fowell
To: Alfred Traverse <traverse@ems.psu.edu>,
Douglas Williams <doug@epoch.geol.sc.edu>
X-MIME-Autoconverted: from QUOTED-PRINTABLE to 8bit by pangaea.ems.psu.edu id SAA19119

The following request was sent to you by mail recently. We would very much appriciate it if you could respond, preferably by FAX or e-mail, as soon as possible so that we may fully consider this candidate. Thaks for your help!

Sarah Fowell has suggested you as a potential referee in their application for our open faculty position in paleontology at the University of Nevada. As a guide, we enclose a copy of the advertisement as it appeared earlier this spring.

We would very much like to hear your views regarding this candidate, so that we can assess who will make the best match with our program. In your letter, we would greatly appreciate it if you would address as many of the following points as possible:

1) How well and for how long have you known the candidate? Is your relationship supervisory or collegial, or includes both?

2) If your relationship involved research, please assess the applicant¹s ability to conceive and perform original research. Does the candidate work best independently, or as part of a team? What is your assessment of the potential for the applicant to apply for and receive funding for their work from national funding agencies?

3) If your relationship involved teaching activity on the part of the applicant, please assess as specifically as possible the applicant¹s interaction with students as a teacher. If the applicant was a TA under your supervision, how much opportunity did they have to prepare and teach materials themselves, and what were the results?

4) Please identify the very strongest attributes of this candidate. Where do you judge performance will be truly outstanding, and why? Are there any areas of potential weakness? Are there areas that may require special consideration?

5) Please asses the candidate as a potential colleague in an academic department. In particular, we would appreciate your comments on how well the applicant works with others both within and outside their discipline. How do you judge this candidate will fit into a diverse and complex program where

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committee meetings, students, and research interests all compete for time?

We plan to fill this position in April, and would very much appreciate your earliest response. Thank you very much for your effort in helping us to evaluate one of the stronger applicants for our position.

James H. Trexler, Jr.
Associate Professor of Geology
Department of Geological Sciences, MS 172
Mackay School of Mines
University of Nevada, Reno
Reno, NV 89557-0138
ph. (702) 784-1504
FAX (702) 784-1833
e-mail: trexler@mines.unr.edu

Hunt Institute for Botanical Documentation

To: sjf@lamont.ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: UNH
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Just listened to your message re UNH. It's in Durham, as I recall, and a very nice spot and good small university.

I am e-mailing the response because I don't have phone privileges here, and must pay for all calls. Somehow, e-mail remains free, for a wonder.

There could be a problem. We are out of here enroute to Italy on 22 Mar. Thus, 21 March is the last day here, and we might even stay home that day, making 20 March the last day. Will be back on 17 April.

Furthermore, we have houseguests from Switzerland (Ken Hsu and wife--he and I used to meet at LDGO to confer about the Black Sea in the long ago). They arrive tomorrow and don't leave until the 19th (ouch). We will have to spend practically our time with them. Don't get me wrong, we are VERY close friends, and I am eagerly awaiting their arrival. When might the packet from UNH arrive? Perhaps you should contact them and get permission for me to write a conventional letter? Hmmm.

All the best, as always. Alfred.

Hunt Institute for Botanical Documentation

UNIVERSITY OF NEW HAMPSHIRE

College of Engineering and Physical Sciences
Department of Earth Sciences
James Hall
56 College Road
Durham, New Hampshire 03824-3589
(603) 862-1718 Fax: (603) 862-2649

March 13, 1997

Dr. Alfred Traverse
The Pennsylvania State University
Department of Geosciences
435 Deike Building
University Park, PA 16802

Dear Dr. Traverse:

Dr. Sarah J. Fowell has applied for our position in sedimentary geology and has been selected as one of 12, out of over 160 applicants, whose candidacy we are considering further. Our Department has 12 academic faculty and 10 research faculty, 56 undergraduate majors, and about 70 graduate students in M.Sc. and Ph.D. programs in Geology, Oceanography, Hydrology, and Geochemical Systems.

Dr. Fowell has given your name as a reference and your comments on the candidate are crucial to our decision. We would appreciate your evaluation of her/him with particular reference to the enclosed vacancy announcement and the following points:

1. Breadth and depth of knowledge of earth history and sedimentary geology.

2. Teaching skills at all levels, general education to graduate.

3. Commitment to undergraduate teaching.

4. Likelihood of developing a high-quality research program involving undergraduates, Masters, and Ph.D. students.

5. Likelihood of securing external support for his/her research program.

6. Interest and ability for productive interaction with a diverse group of colleagues, in teaching, research, and service.

To make a timely decision, we would appreciate your response by 24 March. We welcome responses via fax (603-862-2649) or email (earth.sciences@unh.edu) but request that you also send a hard copy of your response via U.S. Mail. Please be assured that your comments will be kept confidential to the fullest extent possible.

Thank you for your contribution to our selection process.

Sincerely yours,

S. Lawrence Dingman

S. Lawrence Dingman, Chairperson

Hunt Institute for Botanical Documentation

THE PENNSYLVANIA STATE UNIVERSITY
DEPARTMENT OF GEOSCIENCES
PALYNOLOGICAL LABORATORIES
435 DEIKE BUILDING
UNIVERSITY PARK, PA 16802, USA
Phone: (814)863-3419; Fax: 814-863-7823

13 March, 1997

Dr. S. Lawrence Dingman
Chairperson
Department of Earth Sciences
James Hall
56 College Road
Durham, New Hampshire 03824-3589

Dear Dr. Dingman:

Thanks for your faxed letter of earlier today, re the candidacy of Sarah J. Fowell, Ph. D., for your position in the area of sedimentary geology. Because I am about to leave for Europe, I sat down immediately to get this letter off to you.

I have known Sarah for more than eight years. She came here for a semester to take my palynology course because Columbia did not offer such instruction. Since then she has spent several periods totalling more than a year here, using my library and laboratory in connection with her research. She has been a guest at our home during these visits several times. She was recently here again--she and I are working jointly in the Triassic of New Brunswick.

I eventually became part of her doctoral committee and participated in her defense, etc. I was her actual advisor on technical aspects of her project, because her thesis work was largely in palynology, and the professor with whom she worked at Lamont-Doherty is a vertebrate paleontologist.

Sarah is a very intelligent, highly organized and capable person, a quick learner, resourceful and very industrious. Her Triassic research has been a big contribution to this field, and I have greatly profitted from our joint efforts in the Fundy Basin. Based on her performance in my course, our research together, and general observation, I expect Sarah to be a very productive scientist. We have also found her to be good company and fun to have around.

On several occasions I have had Sarah give lectures for me here, and I think so highly of her teaching ability that I asked her two years ago to give the lectures and teach the labs in my course for several weeks while I was out of the country. She lived in our home and used the library and collections of my lab, in connection with her Neogene research in Lake Baikal. The students in the class were very happy with Dr. Fowell's

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performance in the course, and some went out of their way to mention her in the course evaluation.

Sarah is obviously highly qualified in all aspects of paleontology, stratigraphy, and is also a skilled sedimentologist. From her long association with Lamont-Doherty she has filled in her geological background, which was already excellent, so that she is qualified to teach any aspect of basic geology. She is also very well versed in both vertebrate and invertebrate paleontology, and has studied both paleobotany and palynology with me and therefore could obviously teach basic biology, as well as specialty courses in paleo. should UNH ever want her to do so. At Lamont-Doherty she also became very proficient in the use of the computer for imaging, for graph production, and many other applications that I barely understand. In the field she is an unbelievable dynamo, with experience in Antarctica, Siberia, Africa, Mongolia, etc. She now heads up Lamont-Doherty field teams with great distinction. Although she is a small, delicate looking woman, she must be wiry and tough because physical problems have never even been mentioned in connection with any of these challenging field assignments, most recently as chief of a male (except for the interpreter) field team in Mongolia.

As far as sedimentology in particular is concerned, I would think that her experiences and research in Lake Baikal and in Antarctica and her extensive work with fossil lakes of Triassic-Jurassic age in the Newark Basin, and with me in Nova Scotia-New Brunswick, would give Sarah a handle on the natural history of modern and ancient lakes that should be rather unique. Her work has been directly concerned with all aspects of sedimentology, and I would anticipate that she should be able to make contributions especially to projects involving the provenance and distribution of organic matter. Indeed, much of her research has been right down that line.

As far as external support is concerned, it should be noted that she has been living on grants for quite a few years now, and at Lamont-Doherty has become familiar with all aspects of raising "soft" money.

In brief, Dr. Fowell is a most talented individual whom your students are sure to like and a woman who will make a significant contribution mark wherever she goes. I recommend her to you without qualification. If you are considering recent Ph.D.s, and if your needs are as stipulated in your letter, it is hard for me to imagine your finding a better qualified individual.

Yours very truly,

Alfred Traverse
Professor Emeritus of Palynology

Hunt Institute for Botanical Documentation

THE PENNSYLVANIA STATE UNIVERSITY
DEPARTMENT OF GEOSCIENCES
PALYNOLOGICAL LABORATORIES
435 DEIKE BUILDING
UNIVERSITY PARK, PA 16802, USA
Phone: (814)863-3419; Fax: 814-863-7823

19 January, 1997

Dr. Edward Stump
Search Committee Chair
Department of Geology
Box 871404
Arizona State University
Tempe, AZ 85287-1404

Dear Dr. Stump:

This letter is in support of the candidacy of Sarah J. Fowell, Ph. D., for your position in the area of Biogeology.

I have known Sarah for more than eight years. She came here for a semester to take my palynology course because Columbia did not offer such instruction. Since then she has spent several periods totalling more than a year here, using my library and laboratory in connection with her research. She has been a guest at our home during these visits several times. She was recently here again--she and I are working jointly in the Triassic of New Brunswick.

I eventually became part of her doctoral committee and participated in her defense, etc. I was her actual advisor, because her work was in palynology, and the professor with whom she worked at Lamont-Doherty is a vertebrate paleontologist.

Sarah is a very intelligent, highly organized and capable person, a quick learner, resourceful and very industrious. Her Triassic research has been a big contribution to this field, and I have greatly profitted from our joint efforts in the Fundy Basin. Based on her performance in my course, our research together, and general observation, I expect Sarah to be a very productive scientist. We have also found her to be good company and fun to have around.

On several occasions I have had Sarah give lectures for me here, and I think so highly of her teaching ability that I asked her two years ago to give the lectures and teach the labs in my course for several weeks while I was out of the country. She lived in our home and used the library and collections of my lab, in connection with her research in Lake Baikal. The students in the class were very happy with Dr. Fowell's performance in the course, and some went out of their way to mention her in the course evaluation.

Of the areas mentioned in your announcement, Sarah is obviously highly qualified in all aspects of paleontology, stratigraphy,

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and is also a skilled sedimentologist. From her long association with Lamont-Doherty she has filled in her geological background, which was already excellent, so that she is qualified to teach any aspect of basic geology. She is also very well versed in both vertebrate and invertebrate paleontology, and paleobotany and therefore obviously could teach any aspect of basic biology, as well as specialty courses in paleo. At Lamont-Doherty she also became very proficient in the use of the computer for imaging, for graph production, and many other applications that I barely understand. In the field she is an unbelievable dynamo, with experience in Antarctica, Siberia, Mongolia, etc. She now heads up Lamont-Doherty field teams with great distinction. Although she is a small, delicate looking woman, she must be wiry and tough because physical problems have never even been mentioned in connection with any of these challenging field assignments, most recently as chief of a mostly male field team in Mongolia.

In brief, Dr. Fowell is a most talented individual whom your students are sure to like and a woman who will make a significant contribution mark wherever she goes. I recommend her to you without qualification. If you are considering recent Ph.D.s, and if your needs are as stipulated in your ad, it is hard for me to imagine your finding a better qualified individual.

Yours very truly,

Alfred Traverse
Professor Emeritus of Palynology

Hunt Institute for Botanical Documentation

ARIZONA STATE UNIVERSITY

December 20, 1996

Dr. Alfred Traverse
The Pennsylvania State University
Department of Geosciences
435 Deike Building
University Park, PA 16302

Dear Dr. Traverse:

Dr. Sarah Fowell is being considered for a faculty position in Biogeology in the Department of Geology at Arizona State University. She has listed you as a reference on his application. We would greatly appreciate your candid opinion of her qualifications and any other information you can provide. We are especially interested in:

1. The candidate's research interests, motivation, and potential. Does she recognize significant and important scientific problems? Does she have the motivation to generate funding, to publish high quality papers, and to be a leader in this field? How would you rank her with respect to peers? In particular, we would appreciate frank comparisons of this candidate with other individuals you know or have known at similar stages of their careers.

2. The candidate's teaching ability and effectiveness. Is she a clear and organized speaker? Does she communicate easily with colleagues and students? Does she have a sincere desire to be an outstanding teacher?

3. The candidate's interaction with students and colleagues. Is she someone you would choose as a colleague? Would students find her approachable? Would you expect her to willingly participate in the affairs of the department, the university, and the greater scientific community?

4. Do you perceive any weaknesses?

Please be assured that your reply will be held in strictest confidence. I realize that this can be a time-consuming matter, and we greatly appreciate your efforts to help us. We want to begin reviewing the files before the end of January, so we would like to have your response by January 21, 1996 if at all possible. A copy of our position announcement is enclosed. Thank you very much.

Sincerely,

Edmund Stump
Professor and Search Committee Chair
email: ed.stump@asu.edu

MAIN CAMPUS
COLLEGE OF LIBERAL ARTS AND SCIENCES
Department of Geology
PO BOX 871404, TEMPE, AZ 85287-1404
(602) 965-5081 FAX: (602) 965-8102

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ARIZONA STATE UNIVERSITY

FACULTY POSITION ANNOUNCEMENT

Arizona State University/Biogeology

The Department of Geology at Arizona State University invites applications for a tenure-track faculty position in Biogeology. Rank is open. We encourage applications from persons with research interests in fields such as Paleontology, Biostratigraphy, Biogeochemistry, Paleoecology, Paleoclimatology, Origin and Molecular History of Life, and Exobiology. Requirements are a Ph.D. in the geological or related sciences, evidence of research and teaching achievement or potential appropriate to rank, and the ability to teach an undergraduate majors' course that provides a comprehensive understanding of the role of biologic processes in geology. The successful candidate will be expected to sustain a vigorous research program and to be strongly committed to quality teaching at the undergraduate and graduate levels. Applicants for Associate or Full Professor must demonstrate an outstanding, established research program. Starting date: 16 August 1997.

Send letters of application describing current research and teaching interests, curriculum vitae, and names and addresses of three potential references to: Edmund Stump, Search Committee Chair, Department of Geology, Box 871404, Arizona State University, Tempe, AZ 85287-1404; Phone: (602) 965-5081; Fax: (602) 965-8102. The closing date for applications is 1 December 1996 and the first day of each month thereafter until the position is filled. Arizona State University is an Equal Opportunity/Affirmative Action employer.

MAIN CAMPUS
COLLEGE OF LIBERAL ARTS AND SCIENCES
Department of Geology
PO BOX 871404, TEMPE, AZ 85287-1404
(602) 965-5081 FAX: (602) 965-8102

Hunt Institute for Botanical Documentation

Date: Sun, 23 Feb 97 13:31:52 EST
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah J. Fowell)
Subject: Re: query

Hi Alfred,

Very quickly, P. densus is found all the way up to the Tr/J boundary in all the Newark Supergroup basins, as well as in some Norian/Rhaetian sections in Italy (Brugman, pers. commun, 1992). I did not find C. secatus, which is certainly Carnian, in the Fundy material. I don't know where she (he) got that from. I guess some of our verrucate Spheripollenites grains look like C. secatus. But not much.

Also the presence of C. torosa and C. murphyae are indicative of a Norian (or younger) age. In addition, the Fundy material contains some monosulcate grains (the ones we so contorversially named) which have thus far only been recovered from the supposed latest Triassic of the Newark Supergroup.

Lastly, there is no evidence of a hiatus between the sedimentary rocks and the overlying basalt flow, which is dated at 201 Ma. The basalt flow is only a meter above the highest palynoflora.

Hope that does the trick.

Sarah

Dr. Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Phone (914) 365-8709
Fax 914 365-8154
http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

To: sjf@lamont.ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: query
Cc:
Bcc:
X-Attachments:

Dear Sarah:

One of my Triassic buddies in Germany is Carmen Heunisch. She just sent me an e-mail, which I could just copy to you, except that it's in German. In brief, she says that Jens Lund is visiting her, and that he raised the issue of the Norian call for some of our stuff in Fowell and Traverse. He claims that the characteristic forms (C. secatus; P. densus etc.) are normally Karn. Her final sentence: "Are there dependable indications that it actually is a Norian occurrence?"

What do you say I should say?

Best. Alfred.

Hunt Institute for Botanical Documentation

Tulane

Geology Department
Tulane University
New Orleans, LA 70118-5698
(504) 865-5198
FAX (504) 865-5199
email - snelson@mailhost.tcs.tulane.edu

February 5, 1997

Dr. Alfred Traverse
The Pennsylvania State University
Department of Geosciences
435 Deike Building
University Park, PA 16802

Dear Dr. Traverse,

Dr. Sarah J. Fowell has applied for a tenure-track Assistant Professor position in Sedimentary Geology in the Geology Department of Tulane University, and has provided your name as a reference. We would sincerely appreciate your frank comments concerning Dr. Fowell's ability and/or potential in teaching and capacity to establish a strong program of research. Further, we would be grateful for any information you can provide regarding the character, work ethic, personality, and resourcefulness of Dr. Fowell. I know this places a burden on your busy schedule, but I would appreciate, and I am sure Dr. Fowell would appreciate, a prompt response to this request, as we will be making a decision by February 15. Although you may respond by e-mail, I would be grateful if you would also send your comments by regular mail or fax. I wish to thank you in advance for your assistance in this important matter.

Sincerely,

Stephen A. Nelson Ph.D.
Chair

Hunt Institute for Botanical Documentation

To: snelson@mailhost.tcs.tulane.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: sjf.rec
Cc:
Bcc:
X-Attachments:

Dear Dr. Nelson:

Whoops! Yours of 5 Feb. re Dr. Sarah J. Fowell was postmarked 7 Feb. and arrived on my desk yesterday. That is not unusual service from New Orleans to here--unfortunately.

But I note that you will be making a decision by 15 Feb. That is pretty rough.

Anyway, I am going into Word Perfect as soon as I send this out, and will hand carry the letter about Sarah to the postoffice. You should have it by next Monday with luck (unless the Tulane campus mail service is as sluggish as the one at PSU). The fax machine room in this department is not the sort of place I regard as suitable for sending out anything confidential.

In brief, Sarah is an outstanding scientist, amazingly productive, a good teacher, a very nice person, a fantastic field worker who just bossed an otherwise all male field party in Mongolia. She has also done research in Siberia, Antarctica, Africa and all over North America. She is just a super candidate whom you would be lucky to sign on before somebody else does.

Best wishes. Alfred Traverse

Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: visit
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Surely one of the academic jobs will pan out for such a talented person.

"Third week in May" is ambiguous. The first week begins on Thursday, 1 May. That would make the third week the one that begins with 11 May. Or were you talking only about complete weeks? That would make the third week the week that begins 19 May. I would prefer the earlier one, but I think you probably meant the latter one. Actually, I could live with that as well.

All the best. Alfred.

Hunt Institute for Botanical Documentation

Date: Tue, 28 Jan 97 14:01:41 EST
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: letters, visit

Dear Alfred,

Thanks for letting me know about Oregon. I hadn't realized that they were also asking for letters. I think they are mainly looking for a sedimentologist, which is certainly something that I can do, since a solid understanding of sedimentology is often important to interpreting my paly results. I was also dubious about applying for a limnology job (Wesleyan) at first. But I went to the library here and checked out some textbooks to find out what limnologists do. I discovered that, due to my work in Baikal, I have a good understanding of most or all of the topics covered in the textbooks. So I send Wesleyan a course description of the type of limnology class I want to teach - basic limnology but with emphasis on understanding modern processes in order to interpret the paleoclimate record. I'm sure I could do that well.

I just dropped two more applications in the mail. Tulane and Idaho State. Both are sedimentology positions.

A week in May would be a fine time to get back to work on the Fundy assemblages. That will give me time to take more pictures, and work on some other papers in the meantime. Right now my schedule looks fairly open, but I might be putting in a proposal for the May 15 deadline. Perhaps we should plan for the 3rd week in May? What would be good for you?

Sarah

Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Phone (914) 365-8709
Fax 914 365-8154
http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: letters, visit
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Yours of 24 Jan. apparently came after my second message to you last week--that a letter went out to U. Oregon too. Both Wesleyan and Oregon went out their way to emphasize that they are seriously interested. Of course, I don't think of you as either a "limnologist" or "fluid processes person," but any port in a storm, and I am sure you could handle either job with aplomb and still do paleopaly. as well! My letters surely couldn't hurt your cause.

Well, I'm running into a very crowded schedule. I am under great pressure from Sid Ash and Ted Daeschler to finish the projects I have on the burner with them. A month from today we leave for a little trip to the Midwest that I can't really defend, but it is a fact (Big Ten Womens' Basketball Tournament). We return on 5 March. Almost immediately thereafter my old friend Ken Hsu (the famed geologist from China & Switzerland) arrives for a week's visit with his wife (he's a little younger than I and says, "This will be Christine and my last visit because of our age." Ye gods.) They will stay over the weekend of their arrival at Alphabet Arboretum, then in the condo. On the day after they leave we are off to Italy for three weeks, arriving back about mid-April. So, in all honesty it looks to me as if meaningful coop work couldn't be before early May. After May the only sizable travel plan is to attend my 50th class reunion at Harvard (it's really the 51st, but that's another story) in mid-June. That will take about ten days all told. I'd say we should plan now on some week in May and get it into the calendar so that it is regarded here as an obligation!

Wouldn't it be fun if you went to Wesleyan, with its rich Cornet connections?

Best. Alfred.

Hunt Institute for Botanical Documentation

THE PENNSYLVANIA STATE UNIVERSITY
DEPARTMENT OF GEOSCIENCES
PALYNOLOGICAL LABORATORIES
435 DEIKE BUILDING
UNIVERSITY PARK, PA 16802, USA
Phone: (814)863-3419; Fax: 814-863-7823

25 January, 1997

Dr. Gregory J. Retallack, Chair
Faculty Search Committee
Department of Geological Sciences
1272 University of Oregon
Eugene, OR 97403-1272

Dear Greg:

Thanks for yours of 21 Jan., re the candidacy of Sarah J. Fowell, Ph. D., for your position in the area of fluid processes.

I have known Sarah for more than eight years. She came here for a semester to take my palynology course because Columbia did not offer such instruction. Since then she has spent several periods totalling more than a year here, using my library and laboratory in connection with her research. She has been a guest at our home during these visits several times. She was recently here again--she and I are working jointly in the Triassic of New Brunswick.

I eventually became part of her doctoral committee and participated in her defense, etc. I was her actual advisor, because her work was in palynology, and the professor with whom she worked at Lamont-Doherty is a vertebrate paleontologist.

Sarah is a very intelligent, highly organized and capable person, a quick learner, resourceful and very industrious. Her Triassic research has been a big contribution to this field, and I have greatly profitted from our joint efforts in the Fundy Basin. Based on her performance in my course, our research together, and general observation, I expect Sarah to be a very productive scientist. We have also found her to be good company and fun to have around.

On several occasions I have had Sarah give lectures for me here, and I think so highly of her teaching ability that I asked her two years ago to give the lectures and teach the labs in my course for several weeks while I was out of the country. She lived in our home and used the library and collections of my lab, in connection with her research in Lake Baikal. The students in the class were very happy with Dr. Fowell's performance in the course, and some went out of their way to mention her in the course evaluation.

Hunt Institute for Botanical Documentation

course evaluation.

Sarah is obviously highly qualified in all aspects of paleontology, stratigraphy, and is also a skilled sedimentologist. From her long association with Lamont-Doherty she has filled in her geological background, which was already excellent, so that she is qualified to teach any aspect of basic geology. She is also very well versed in both vertebrate and invertebrate paleontology, and has studied both paleobotany and palynology with me and therefore could obviously teach basic biology, as well as specialty courses in paleo. At Lamont-Doherty she also became very proficient in the use of the computer for imaging, for graph production, and many other applications that I barely understand. In the field she is an unbelievable dynamo, with experience in Antarctica, Siberia, Mongolia, etc. She now heads up Lamont-Doherty field teams with great distinction. Although she is a small, delicate looking woman, she must be wiry and tough because physical problems have never even been mentioned in connection with any of these challenging field assignments, most recently as chief of a male (except for the interpreter) field team in Mongolia.

As far as fluid processes in particular are concerned, I would think that her experiences and research in Lake Baikal and in Antarctica and her extensive work with fossil lakes of Triassic-Jurassic age in the Newark Basin, and with me in Nova Scotia-New Brunswick, would give Sarah a handle on the natural history of modern and ancient lakes that should be rather unique. Her work has been directly concerned with all aspects of sedimentology, and I would anticipate that she should be able to make contributions especially to projects involving the provenance and distribution of organic matter. Indeed, much of her research has been right down that line.

In brief, Dr. Fowell is a most talented individual whom your students are sure to like and a woman who will make a significant contribution mark wherever she goes. I recommend her to you without qualification. If you are considering recent Ph.D.s, and if your needs are as stipulated in your letter, it is hard for me to imagine your finding a better qualified individual.

Yours very truly,

Alfred Traverse
Professor Emeritus of Palynology

Hunt Institute for Botanical Documentation

January 21, 1997

UNIVERSITY OF OREGON

Dr. Alfred Traverse
The Pennsylvania State University
Department of Geosciences
University Park PA 16802

Dear Dr. Traverse:

The Department of Geological Sciences at the University of Oregon is currently evaluating candidates for a tenure-track position in the field of fluid processes. Dr. Sarah J. Fowell is seriously being considered for this position, and has listed you as a reference. We would greatly appreciate your candid opinion of her qualifications and any other information that will assist us in this evaluation. We are particularly interested in the following:

1. The significance of her research. Does she know the important areas of her discipline? Is she a potential leader in her field? How would you rank her relative to others of similar age and experience?

2. Is she self-motivated? Is she likely to generate sufficient grant funding to support her research? Does she have the drive and technical knowledge needed to establish facilities and specialized equipment if required in her research?

3. Her teaching ability and interest in students. Is she an effective, well-organized lecturer? Can she stimulate students' interest?

4. We are striving for excellence in our research and teaching program. In your opinion would Dr. Fowell respond favorably to this challenge and participate enthusiastically in the effort?

Oregon law on faculty records provides that if the applicant is not presently or subsequently employed by the university, the confidential information submitted concerning the applicant shall remain confidential. An applicant, however, who is presently, or who is subsequently employed by the university may request access to non-confidential materials in his or her file. If you wish to assure protection of the anonymity of your letter, please state that fact in your letter.

Your prompt reply will be greatly appreciated. Please send your response to Search Committee, Department of Geological Sciences, 1272 University of Oregon, Eugene, OR 97403-1272.

Sincerely yours,

Gregory J. Retallack, Chair
Faculty Search Committee

DEPARTMENT OF GEOLOGICAL SCIENCES
1272 University of Oregon · Eugene OR 97403-1272 · (541) 346-4573 · Fax (541) 346-4692

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Date: Fri, 24 Jan 97 10:55:14 EST
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: letters

Hi Alfred,

Thanks for writing more letters from me. I'm pleased that schools are at least interested. I've applied for several more jobs (U. Southern California, U. Oregon, and U. Western Carolina) at places that I hope will be interested. Plus I have an interview at Smith on Feb. 20.

I finally received the samples of presumably upper Jr material that I expected to be working on before x-mas. I'm just finishing the processing. Depending on what I find, I may soon need to schedule a visit to State College to look at your references. Perhaps we could put a bit more work into the Fundy material at the same time. Which means I must get busy and take some photos! When will you be ready to move forward with the Fundy project?

Sarah

Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Phone (914) 365-8709
Fax 914 365-8154
http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

To: sjf@lamont.ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: letters
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Just to report that since returning from Key West, etc., last week, I have sent off two recommendation letters for you, one to Arizona State, one to Wesleyan. Both letters requesting recs. expressed great interest in you (unlike the usual such letter, which just says the bare minimum of what is wanted). Both jobs have strong points. Professionally, Arizona State is, of course, in another league from W., but the latter has advantages too. Biggest down side of W. would be heavy teaching load. I wrote very strong letters.

Best. Alfred.

Hunt Institute for Botanical Documentation

To: ed.stump@asu.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: Sarah Fowell rec.
Cc:
Bcc:
X-Attachments:

Dear Dr. Stump:

I have been out of town since 26 Dec. until a couple of days ago. Yours of 20 regarding Sarah Fowell didn't come before the mail office here shut down before Xmas. Hence I didn't open your letter until this morning. I note that there is a 21 Jan. fuse on the thing.

I will flash off the customary snail-mail recommendation in a few minutes. It will go in the university mail tomorrow a. m. and will reach you, on average in five days. However, there is no way it will beat the 2l-I deadline!

Perhaps you will permit me to say via this medium that Sarah would be an ideal candidate for your position--tireless and very capable researcher, nice personality, commitment to young people, good teacher. You just could not do better.

Regular letter, as I said above, will follow shortly.

Regards. Alfred Traverse, Ph. D.

Hunt Institute for Botanical Documentation

WESLEYAN
UNIVERSITY

Department of Earth & Environmental Sciences
265 Church Street
Middletown, Connecticut 06459-0139
(860) 685-2320 FAX: (860) 685-3651

January 16, 1997

Dr. Alfred Traverse
Pennsylvania State University
Department of Geosciences
435 Deike Building
University Park, PA 16802

Dear Dr. Traverse:

We are currently seeking to fill a tenure-track position in our department in the general field of limnology. We are primarily an earth science department that provides course offerings in related areas of environmental science; our faculty are all geologists. Although we are not recruiting specifically for a geologist, we are seeking someone who can interact within our program and offer supplemental earth science courses in addition to limnology, such as environmental geochemistry, or paleoecology, or general oceanography, etc.

Sarah Fowell has applied for this position and listed you as a potential referee. We are impressed with Sarah's vitae and are interested in her candidacy. Would you please provide us with a candid evaluation of Dr. Fowell, with particular attention to how she might be able to interact within our program.

Thank you for your assistance in evaluating Sarah Fowell, and bringing our search to a successful conclusion. You may be assured that your response will be held in the strictest confidence.

Sincerely,

Gregory S. Horne, Chair

Hunt Institute for Botanical Documentation

THE PENNSYLVANIA STATE UNIVERSITY
DEPARTMENT OF GEOSCIENCES
PALYNOLOGICAL LABORATORIES
435 DEIKE BUILDING
UNIVERSITY PARK, PA 16802, USA
Phone: (814)863-3419; Fax: 814-863-7823

File

24 January, 1997

Dr. Gregory S. Horne
Department of Earth & Environmental Sciences
Wesleyan University
265 Church St.
Middletown, CT 06459-0139

Dear Dr. Horne:

Thanks for yours of 16 Jan., re the candidacy of Sarah J. Fowell, Ph. D., for your position in the area of Limnology.

I have known Sarah for more than eight years. She came here for a semester to take my palynology course because Columbia did not offer such instruction. Since then she has spent several periods totalling more than a year here, using my library and laboratory in connection with her research. She has been a guest at our home during these visits several times. She was recently here again--she and I are working jointly in the Triassic of New Brunswick.

I eventually became part of her doctoral committee and participated in her defense, etc. I was her actual advisor, because her work was in palynology, and the professor with whom she worked at Lamont-Doherty is a vertebrate paleontologist.

Sarah is a very intelligent, highly organized and capable person, a quick learner, resourceful and very industrious. Her Triassic research has been a big contribution to this field, and I have greatly profitted from our joint efforts in the Fundy Basin. Based on her performance in my course, our research together, and general observation, I expect Sarah to be a very productive scientist. We have also found her to be good company and fun to have around.

On several occasions I have had Sarah give lectures for me here, and I think so highly of her teaching ability that I asked her two years ago to give the lectures and teach the labs in my course for several weeks while I was out of the country. She lived in our home and used the library and collections of my lab, in connection with her research in Lake Baikal. The students in the class were very happy with Dr. Fowell's performance in the course, and some went out of their way to mention her in the course evaluation.

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Of the areas mentioned in your letter, Sarah is obviously highly qualified in all aspects of paleontology, stratigraphy, and is also a skilled sedimentologist. From her long association with Lamont-Doherty she has filled in her geological background, which was already excellent, so that she is qualified to teach any aspect of basic geology. She is also very well versed in both vertebrate and invertebrate paleontology, and has studied both paleobotany and palynology with me and therefore could obviously teach basic biology, as well as specialty courses in paleo. At Lamont-Doherty she also became very proficient in the use of the computer for imaging, for graph production, and many other applications that I barely understand. In the field she is an unbelievable dynamo, with experience in Antarctica, Siberia, Mongolia, etc. She now heads up Lamont-Doherty field teams with great distinction. Although she is a small, delicate looking woman, she must be wiry and tough because physical problems have never even been mentioned in connection with any of these challenging field assignments, most recently as chief of a male (except for the interpreter) field team in Mongolia.

As far as limnology specifically is concerned, I would think that her experiences and research in Lake Baikal and in Antartica and her extensive work with fossil lakes of Triassic-Jurassic age in the Newark Basin, and with me in Nova Scotia-New Brunswick, would give Sarah a handle on the natural history of modern and ancient lakes that should be rather unique.

In brief, Dr. Fowell is a most talented individual whom your students are sure to like and a woman who will make a significant contribution mark wherever she goes. I recommend her to you without qualification. If you are considering recent Ph.D.s, and if your needs are as stipulated in your letter, it is hard for me to imagine your finding a better qualified individual.

Yours very truly,

Alfred Traverse
Professor Emeritus of Palynology

P. S. It would be fun for me to have yet another connection with Wesleyan. Many decades ago when I was a student at Harvard I used to visit Middletown on weekends because my mother's first cousin was the widow of the former superintendent of schools there, and she was herself an English teacher in the system. Later, I used to visit the geological survey on your campus, and one of my papers (on the Hartford-Springfield Basin) was co-authored by a man who was then active there.

Hunt Institute for Botanical Documentation

Date: Fri, 29 Nov 96 13:42:06 EST
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: rec.

Dear Alfred,

Thank you for sending off a letter for me so quickly. I still can't find my third referee. Doug Williams has small children and probably won't be at work again until Monday. Hopefully Smith will understand, since their letter didn't arrive until 4PM the day before an academic holiday.

I don't have a copy of Samilovich's book, and I'd be very grateful if you would send me one. I have mastered the Russian alphabet. I even took Russian lessons for a month when I was living in Irkutsk. I fear I've forgotten much since then, but I can still probably wade through some palynomorph descriptions with my dictionary in hand.

You are right that I would consider working for Exxon. Though you are also right that I'd prefer an academic job.

Hope you are enjoying your holiday.
Wish Betty a happy birthday for me.

Sarah

Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Phone (914) 365-8709
Fax 914 365-8154
http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

THE PENNSYLVANIA STATE UNIVERSITY
DEPARTMENT OF GEOSCIENCES
PALYNOLOGICAL LABORATORIES
435 DEIKE BUILDING
UNIVERSITY PARK, PA 16802, USA
Phone: (814)863-3419; Fax: 814-863-7823

29 November, 1996

Geology Search
c/o Dr. John Brady, Chair
Department of Geology
Smith College
Northampton, MA 01063

Dear Dr. Brady:

This letter is in support of the candidacy of Sarah J. Fowell, Ph. D., for your position as assistant professor in the sedimentology area.

I have known Sarah for more than eight years. She came here for a semester to take my palynology course because Columbia did not offer such instruction. Since then she has spent several periods totalling more than a year here, using my library and laboratory in connection with her research. She has been a guest at our home during these visits several times. (In fact we are in the midst of such a period at the moment, as she and I are working jointly in the Triassic of New Brunswick.) I eventually became part of her doctoral committee and participated in her defense, etc. I was her actual advisor, because her work was in palynology, and the professor with whom she worked at Lamont-Doherty is a vertebrate paleontologist.

Sarah is a very intelligent, highly organized and capable person, a quick learner, resourceful and very industrious. Her Triassic research has been a big contribution to this field, and I have greatly profitted from our joint efforts in the Fundy Basin. Based on her performance in my course, our research together, and general observation, I expect Sarah to be a very productive scientist. We have also found her to be good company and fun to have around.

On several occasions I have had Sarah give lectures for me here, and I think so highly of her teaching ability that I asked her to give the lectures and teach the labs in my course for several weeks while I was out of the country a couple of years ago. She lived in our home and used the library and collections of my lab, in connection with her research in Lake Baikal. The students in the class were very happy with Dr. Fowell's performance in the course, and some went out of there way to mention her in the course evaluation.

Sarah is obviously highly qualified in all aspects of

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paleontology, stratigraphy, and sedimentology. From her long association with Lamont-Doherty she has filled in her geological background, which was already excellent, so that she is qualified to teach any aspect of basic geology. At Lamont-Doherty she also became very proficient in the use of the computer for imaging, for graph production, and many other applications that I barely understand. In the field she is an unbelievable dynamo, with experience in Antarctica, Siberia, Mongolia, etc. She now heads up Lamont-Doherty field teams with great distinction. Although she is a small, delicate looking woman, she must be wiry and tough because physical problems have never even been mentioned in connection with any of these challenging field assignments.

In brief, Dr. Fowell is a most talented individual whom your students are sure to like and a woman who will make a significant contribution wherever she goes. I recommend her to you without qualification. If you are considering recent Ph.D.s, it is hard for me to imagine your finding a better qualified individual.

Yours very truly,

Alfred Traverse
Professor Emeritus of Palynology

Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: rec.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Although it's Betty's birthday, I am here because I had an appt. with an orthopedic surgeon. I may need some work on my carpel tunnel problem in the left hand/wrist. I had the right hand "done" years ago.

Got both your phone message and the e-mail. I have been home both Wed. and Thanksgiving.

Will fire off the letter to Smith immediately. I better hand carry it to the P. O. because if I fling it in the PSU mail "service" it won't be seen again until the middle of next week.

A few days ago I got a message from Exxon. Startling news--they are thinking of hiring palynologists again. I told them that you are hoping to get an academic post, but that I supposed you'd be willing to consider a good job with Exxon.

Happy holidays. I'm doing some more sorting of literature. Did I already give you a copy of Samoilovich's book on Jurassic/Cret.? Blue cover. I have an extra copy and plan to give it to you if you don't have it. Important book. You should sign up for a course in basic Russian. It isn"t that hard to read palynological Russian--the alphabet takes about two days. The Russian verbs take about two decades, but to read palynology you can mostly fake it.

Best. Alfred.

Hunt Institute for Botanical Documentation

Date: Wed, 27 Nov 96 16:12:16 EST
To: traverse@ems.psu.edu
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Smith College

Hi Alfred,

I left you a phone message as well.
I need another recommendation. Smith College has asked for letters. They would like the letters sent by Dec. 1. Since I just got the request today, I fear they are dreaming. But if you could send it ASAP I would greatly appreciate it.

The letter should be sent to:
Geology Search
c/o Dr. John Brady, Chair
Department of Geology
Smith College
Northampton, MA 01063

Smith is looking for a tenure-track asst. professor in sedimentology. They want someone to teach an intermediate sed. course and geology courses at the introductory and advanced levels. That's about all the ad says.

Sarah

Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Phone (914) 365-8709
Fax 914 365-8154
http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

Date: Fri, 22 Nov 96 15:10:26 EST
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: Jr-Tr

Dear Alfred,

Oh no! Don't tell me I forgot my slides! As far as the Martin Head material goes, I suppose it doesn't really matter. The reason I've not been working on it is that I'm still waiting for my order of Clearcol to arrive. Though I confess I didn't order until last week. When it gets here, I'm going to make new slides of the Fundy residues and begin taking some new pictures. The old slides are OK but would not produce pubishable photos, so I decided not to waste much more time on them.

I'm hoping to make some strides on the MH material even while working on my proposal for Jan. 15. So a meeting at the end of Jan. might still be productive. However, if you prefer mid February, that would be OK too.

I may plan a short visit in early Dec., if I do go ahead with this new consulting job. They told me last week that they would send the samples immediately, but so far nothing has arrived. And I haven't heard from them. As I'm incredibly busy, I don't much care. But I would like to know what their intentions are. I'll let you know when they make their wishes known.

Sarah

Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Phone (914) 365-8709
Fax 914 365-8154
http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: Jr-Tr
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Well, you got half of it. The binder is indeed one item. What's the other one? The Sherlock H. in me is getting a kick out of this. How do I know that SJF hasn't been working on Fundy Basin since leaving here? Etc.

I was no good at all to you re Jr refs. But, truthfully, I really think you have to come here to get that out of the files. While here you could milk Linda Musser, the head EMS librarian. She's a marvel at smelling out lit.

You confuse me. If you have a "Jan. 15" proposal deadline, how is a late Jan. get-together going to help?

We may spend the first week of Feb. in Ottawa. Our trip to Italy has been switched from 9-31 March to 23 Mar.-13 April.

Hang in there. Best. Alfred.

Hunt Institute for Botanical Documentation

Date: Mon, 18 Nov 96 08:54:49 EST
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: Jurassic

Dear Alfred,

I've been quite busy the last couple weeks, preparing job applications and putting the finishing touches on my report for ARCO. However I was beginning to wonder what I had done with the binder in which I pasted the photos of pollen species from Morocco and Canada. Would that be what I left behind? I hope so, otherwise I'm missing both the binder and some other object I haven't even begun to look for.

Thanks for tips on the Jurassic references. I am planning to use georef to get started. But I may need to pay you a visit, depending on what I find in the samples.

Regarding the Martin Head material, I will get back to work on it this week. I do have a Jan. 15 proposal deadline, so we should plan to get together again sometime in late January. Let me know what your schedule is like.

Sarah

Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Phone (914) 365-8709
Fax 914 365-8154
http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: Jurassic

Dear Sarah:

Congrats on getting another consulting job. I am sure you could support yourself that way if you wanted to.

I have lots of Late Jurassic refs., but the best I can offer is for you to come here and check it out for yourself. Of course, you could use Georef and the like to get started.

By the way, when I saw your name on the incoming message list I was sure you would want to know if your left anything here. You did. Do you know what? We thought your not mentioning this was interesting because it proves that dear Sarah is not superhuman after all, but has to have turn around time just like anybody else.

I am at the moment trying to finish my project on what was supposed to be Late Jurassic (with Sid Ash) but which I have proven is actually Early Cretaceous.

All the best. Alfred.

Hunt Institute for Botanical Documentation

Date: Sat, 16 Nov 96 15:28:15 EST
To: traverse@ems.psu.edu
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Upper Jurassic

Hello Alfred,

I had no sooner finished my work for ARCO than I accepted another consulting job. A small one, this time. I'm supposed to date some Upper Jurassic sediments, supposedly Oxfordian or Kimmerigian. Do you have any references for assemblages of this age? I find I have very little in my collection, and I'm not even sure whether it's possible to separate the aforementioned stages on the basis of palynofloras. Hopefully so, as I've agree to try. If you have a list of recommended reading handy, I'd much appreciate the advice.

Sarah

Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Phone (914) 365-8709
Fax 914 365-8154
http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: phone call, orange juice, etc.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

The machine said 12 a. m. Sun. That would be 9 p. m. Sat. in Seattle, of course. Believe me, 12 a. m. is what is coming into vogue for what used to be 12 p. m. They want to use 12 p. m. for noon. Maybe he said he HAD called from Seattle, or something. As I said, the caller was intending YOU to get the message, and I wasn't on his wavelength.

The Frick is great. A fantastic Holbein sticks out in my mind. I haven't been there in far too long.

204 looked as if you'd never been there. Thanks for the orange juice, which we've nearly polished off. We've been there most of the time since you left--Lady Lion BB game, a concert, etc. I have extensively caulked around all pipes, etc., in the pantry to try to block the cigarette smells. I have put up 8 brass hooks in bathroom and closets--I have to do that in all places we acquire. Where do other people hang their pjs, for example? This a. m. when we came down to the lobby it was FULL of polling booths and people at tables checking names. It's an official polling place. Have you found out who your rep. in Congress is?

It was so great having you here. Best. Alfred.

Hunt Institute for Botanical Documentation

Date: Mon, 4 Nov 96 14:54:07 EST
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: call on phone

Hello Alfred,

Thanks for telling me about the message. I talked to my friend Mike yesterday - though he didn't mention that he'd tried to call from Seattle. Are you sure about the time? Aside from the fact that there is no 12 a.m., Mike could not possibly have been in Seattle on Sunday, as he was only there on his way back from GSA, which would have been Thursday. Not that it matters, of course. I'm just wondering if your machine is confusing days as well as hours.

I made it back to New York just fine. No problems, weather, car, or otherwise. I spent a nice weekend with my friend from Wisconsin. I visited the Frick collection for the first time (shameful, since I've been here 10 years). Now I am wrapping up the report for Pierre Zippi. Looking at some of the papers I copied from you, I think the samples he sent me may all be of Carnian age. It's very tricky to pick the Carnian/Ladinian boundary in this case, and reading additional papers only serves to add to the confusion. But they are paying me to make a decision, and I'm in the process of doing just that.

Hope you found the condo all in order today. Thanks for letting me stay.

Sarah

Sarah J. Fowell
Lamont-Doherty Earth Observatory
Palisades, NY 10964
Phone (914) 365-8709
Fax 914 365-8154
http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

THE PENNSYLVANIA STATE UNIVERSITY
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PALYNOLOGICAL LABORATORIES
435 DEIKE BUILDING
UNIVERSITY PARK, PA 16802, USA
Phone: (814)863-3419; Fax: 814-863-7823

30 October, 1996

Dr. Gerald F. Webers
Geology Department
Macalester College
1600 Grand Ave.
St. Paul, MN 55105

Dear Friends:

This letter is in support of the candidacy of Sarah J. Fowell, Ph. D., for your position as assistant professor in the sedimentology-paleontology area.

I have known Sarah for more than eight years. She first came here for a semester to take my palynology course because Columbia did not offer such instruction. Since then she has spent several periods totalling more than a year here, using my library and laboratory in connection with her research. She has been a guest at our home during these visits several times. (In fact we are in the midst of such a period at the moment, as she and I are working jointly in the Triassic of New Brunswick.) I eventually became part of her doctoral committee and participated in her defense, etc. I was her actual advisor, because her work was in palynology, and the professor with whom she worked at Lamont-Doherty is a vertebrate paleontologist.

Sarah is a very intelligent, highly organized and capable person, a quick learner, resourceful and very industrious. Her Triassic research has been a big contribution to this field, and I have greatly profitted from our joint efforts in the Fundy Basin. I gather that her work in Siberia is also very well thought of. Based on her performance in my course, our research together, and general observation, I expect Sarah to be a very productive scientist. We have also found her to be good company and fun to have around.

On several occasions I have had Sarah give lectures for me here, and I think so highly of her teaching ability that I asked her to give the lectures and teach the labs in my course for several weeks while I was out of the country. She lived in our home and used the library and collections of my lab, in connection with her research in Lake Baikal, while she had charge of my course. The students in the class were very happy with Dr. Fowell's performance, and some went out of there way to mention her in the course evaluation.

Hunt Institute for Botanical Documentation

Of the areas mentioned in your announcement, Sarah is obviously highly qualified in all aspects of paleontology, stratigraphy, and sedimentology. From her long association with Lamont-Doherty she has filled in her geological background, which was already excellent, so that she is qualified to teach any aspect of basic geology. At Lamont-Doherty she also became very proficient in the use of the computer for imaging, for graph production, and many other applications that I barely understand. In the field she is an unbelievable dynamo, with experience in Antarctica, Siberia, Mongolia, etc. She now heads up Lamont-Doherty field teams with great distinction. Although she is a small, delicate looking woman, she must be wiry and tough because physical problems have never even been mentioned in connection with any of these challenging field assignments.

In brief, Dr. Fowell is a most talented individual whom your students are sure to like and a woman who will make a significant contribution mark wherever she goes. I recommend her to you without qualification. If you are considering recent Ph.D.s, and if your needs are as stipulated in your ad, it is hard for me to imagine your finding a better qualified individual.

Yours very truly,

Alfred Traverse
Professor Emeritus of Palynology

Hunt Institute for Botanical Documentation

Date: Fri, 25 Oct 96 12:12:53 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: telephone #

Dear Alfred,

I am planning to leave New York at approximately 7AM on Tuesday, which should put me at your office at noon, correct? I am wondering if you have a phone at your condo. If so, could you tell me the number so that people have some place to contact me in case of emergency?

Thanks much. I'm looking forward to working with you next week. I've identified some of the species in the Martin Head material, but by no means all of them. So I anticipate doing some microscope work while I am there. Does that fit in with your plans? Hopefully we can begin to reach some agreement as to which species are present, and which species are new and need to be described. I would also like to complete an outline for the paper and begin filling it in, so that perhaps we can get a first draft finished by the end of the year. What do you think?

Sarah

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Hunt Institute for Botanical Documentation

Date: Tue, 22 Oct 96 13:00:24 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: spelling, etc.

Dearl Alfred,

Oh good. I am relieved. Misspellings are undesirable, of course, but I can live with that. I was afraid I was going to get into trouble for naming a pollen species after my cat. Or, worse, that the names would be illegal and Gink would remain palynologically uncommemorated.

But yes, we must proofread this next paper more carefully.
See you in a week.

Sarah

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Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: spelling, etc.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Not to worry. Just a few misspellings and disagreements of number, etc. Things I should have caught. On our next paper remind me to do a real proofreading. That means two people, each with a copy and a ruler. ginker and tattoo are very unconventional but perfectly legal.

Hunt Institute for Botanical Documentation

Date: Mon, 21 Oct 96 10:12:32 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: GSA, etc.

Hello Alfred,

Oh dear. OK, indeclinable it is, then. Is there any other problem with those species names?

I will see you in a little more than a week, so I suppose we can discuss it then. But now I'm worried.

Sarah

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Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: GSA, etc.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

The concept of a gal who just returned from Mongolia and not long ago from Siberia (?) being unable to go to Kalamazoo, or wherever GSA is, is somewhat confusing, but I am glad that you weren't mixed up. The fact that the date and day didn't agree made me think it possible you had looked at wrong page in a calendar or some such. I am also mystified about the general situation. Aren't you a LDGO employee? If so, don't they have a policy of supporting their scientists' attendance at national meetings. Don't bother to e-mail an answer. We can discuss next week.

Jansonius has an e-mail message this a. m. in which he goes all over my case about ginker, tattoo and some other such matters we can discuss when you are here. He correctly notes that I let "undeclinable" slip by--should be indeclinable. Etc.

See you soon. Best. Alfred.

Hunt Institute for Botanical Documentation

Date: Fri, 18 Oct 96 19:29:19 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: date of arrival

Dear Alfred,

I can't afford to go to GSA this year. Having gone to both GSA and AGU last year, and to IPC IX this year, I'm out of travel funds for the moment. I could have paid my own way, but given how busy I am I decided it was better to sit down and start getting some papers ready for publication.

So, sadly, I will not go to GSA. But I will enjoy my stay in State College.

Sarah

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Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: date of arrival
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Ruth Robinson is here to discuss times we can look at her Cretaceous palynomorphs. I happened to mention that you are expecting to come here on Tuesday, 29 October (though you said the 28th--that's Mon.). Ruth immediately said, "Isn't she going to GSA?" I must say it seems unlikely in your situation that you are skipping it. Did you make a mistake? Other than the 28/29 goof? Or is Ruth wrong about when GSA is?

Best. Alfred

Hunt Institute for Botanical Documentation

Date: Mon, 14 Oct 96 18:00:01 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: parking, etc.

Dear Alfred,

I think your suggestion that we postpone until the week of the 27th is a good one. I've been swamped here and don't want to show up there unprepared. I think a week's delay would allow me to be much more productive during my visit to Penn State. Is Tues. the 28 - Fri. 31 alright with you?

The $5/week place does sound the most reasonable. I guess I should try to do that. What must I do to get a permit?

Hope all is well with you and Betty.
See you in two weeks (and one day). Right?

Sarah

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Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: parking, etc.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Yes, of course, coming on Wed. is fine. Unfortunately, we have a dinner appointment for that evening. So, the social aspect of your visit would have to begin on Thurs.

The only problem is that it cuts down on the number of days we can work together unless you stay a little longer than originally planned. One reason is the missed Tues. Another is that I am not available on Sat., though I can be available on Sunday. Eventually I intend to get a Japanese screen to make it possible for a guest in the condo to have some privacy in the LR where the sofabed is, so that we could be there simultaneously with guests. However, even with it I am not sure that you could tolerate a co-habitant who arises at 5 a. m. and gets breakfast. This is by way of reminding you that we stay in the condo on Monday nights because of Choral Society that night.

Another possibility would be to postpone to the week of 27 October. That would give us both more opportunity to prepare. I am also not very prepared. I'll go along with whatever you wish, however.

As to parking, it does seem too bad to throw away money that could be used for another purpose. If I were you I'd park in the $5/week place. In the condo, you are five mins. walk from the lab and an easy walk (2-3 locks) to 10 restaurants and a minimal grocery store. Also, there's a campus loop bus that runs all the time that would take you from Deike to the parking lot if you ever did feel you just had to get the car. We would let you use our car to drive to a grocery store, etc. Think about it.

Back to the computer and my effort to learn ACCESS and get my info cards into cyperspace.

Best. Alfred.

Hunt Institute for Botanical Documentation

Date: Mon, 14 Oct 96 10:56:00 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: parking, etc.

Dear Alfred,

Would it be alright to change the date of my visit by one day? I'd like to show up a week from Wed. instead of a week from tomorrow. The reason is that I have to go to Rhode Island Wed., Thurs., and Fri. of this week to split and sample the Mongolia cores. Hence I won't have as much time as I'd like to refresh my memory and make some progress on the Martin Head palynofloras this week. I'd like to have Monday _and_ Tuesday next week to do so, so that I'm (almost) up to speed by the time I get to State College.

Would Wednesday next week be OK with you?

As for parking, I think $6/day is OK. It won't make that much difference, since I pay $4/day just to cross the George Washington bridge. So don't worry about it and I'll park in the ramp.

Sarah

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Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: visit

Dear Sarah:

On your card (don't tell people I still have cards, but thank God I did, when my computer crashed a couple of months ago!) I have sjf@lamont.ldgo.columbia.edu. I note on your messages that the "from" line eliminates the redundant "Lamont." But it goes through o. k. with it too. Hmmm.

This a. m. I walked to the parking garage near the apartment on the way here to put stuff in the car's trunk so that Betty would drive it here. I noted that the 24 hr. rate is not $6 but $8. We pay just $1.50 for overnight (after 6 p. m. to before 8.30 a.m.). I think you will have no trouble with the $5 place. We will arrange the details after you get here--I have already cleared it with the parking office, and they are expecting us. Follow my directions in a previous message. Put in only one quarter or flash up from Brown A so fast that they can't catch you before we go back down! Maybe you better guesstimate TOA so that one of us is sure to be on deck.

We will be expecting you two weeks from today, viz. Tuesday, 29 October. Should be fun. It really is a better idea all around. For one thing it will give us time to install a few more amenities at 204 Regency Square. I really am getting a kick out of being like a Rockefeller with multiple residences for which there is no need to pack.

Cheers. Alfred.

Hunt Institute for Botanical Documentation

Date: Fri, 16 Aug 96 15:39:09 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: Jennifer Mangan

Hi Alfred,

Thanks for passing on that information. I will definetely get in touch with Jennifer soon.

Sorry it has taken me so long to get back for you. Between preparing for Mongolia (we leave on the 28th) and wrapping up this consulting job for Pierre, I've had no time for anything else.

Sarah

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Hunt Institute for Botanical Documentation

Date: Tue, 23 Jul 96 11:03:02 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: bisaccates, etc.

Hi Alfred,

Sorry the truck decided to fail you on your camping trip. But otherwise it sounds as though things went well. Hope Jason has recovered from his asthma attack by now.

You sent me a copy of the unpublished bisaccate manuscript last year sometime. So I have it at my disposal. I also have a set of Jansonius cards. The problem isn't necessarily putting things into the proper genera. Many look similar to various species of Alisporites or Vitreisporites, but don't quite match published descriptions for various reasons. I'm still digging through the literature, though. Just because I haven't found a match yet doesn't mean it isn't out there.

Sarah

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Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: bisaccates, etc.
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Camping trip was a mixed bag. On first day I took a trip in the blue and white truck to visit the old airport near Black Moshannon Park (where we were camped) to show Jason where his mother arrived in PA when she was about his age. It's now deserted. The truck decided to deadhead there. Took hours to get help in a driving rainstorm. Truck towed to Philipsburg, we were taken to campsite. That night we had a terrible, five-hour thunderstorm. If I had had the truck we would have left camp for breakfast, as it was still raining, but we had to tough it out. Rest of time it was very nice, and Jason had a great time. However, he is an asthmatic, and I guess the outdoor particulates or something had an effect. We delivered him home yesterday in the midst of an attack, with a temperature of 103.

Re the Arco job--did you make a copy one of the times you were here of the Pocock unpublished book about bisaccates? Does LDGO have a set of the Jansonius cards? Sounds as if we could do some new genera for the stuff, huh?

Back to the Devonian. All the best. Regards to the Olsens. Alfred.

Hunt Institute for Botanical Documentation

Date: Wed, 17 Jul 96 12:50:59 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: NB Tr

Hello Alfred,

Jason is 8 already?
I remember him much smaller.
Hope the camping trip goes well. I'll bet he has a wonderful time.
Hopefully you and Betty will too.

I've been very busy with the ARCO job lately. I thought they were sending me 20 slides, but I now have 90. It is interesting, but difficult (as ever) to separate many of the bisaccates into species. Pierre will have to settle for photos and descriptions of some of them. I can't find them anywhere in the literature.

Sarah

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Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: NB Tr
Cc:
Bcc:
X-Attachments:

Dear Sarah:

Nice to hear per yours of earlier today. Isn't a surprise, of course. I got nice stuff out of those rocks a couple of decades ago!

Just finished microscopy of the Honduras cores. 55 samples. But not much of a story. So often the case with archeological projects, in my experience. I suspect it's because human garbage dumps are just not likely places for good palynofloras to develop.

Now I am full blast into the Devonian from Renovo area--I am supposed to date world's oldest amphibians. I believe in THIS case I have the spores to do it. Then I have to make good on a promise to Sid Ash to date another of our Oregon/Idaho Jurassic/Cretaceous floras. That will be more of a challenge. THEN the NB Triassic comes to the plate.

However, there is a typical mild interruption about to occur. We take each grandchild camping when he/she reaches 8, and Jason (Martha's boy) is now the beneficiary (victim?). Betty and I are watching with bemusement to see how many more years we can still pack up a truck with all that gear and set up our two-tent camp somewhere. (The main tent is 10x18 and has three rooms.) We pick up J. in about two hours.

All the best. Alfred.

Hunt Institute for Botanical Documentation

Date: Wed, 17 Jul 96 10:02:11 EDT
To: traverse@ems.psu.edu
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Russian flora

Hello Alfred,

I recently received the blurb you sent regarding the book on Russian floras. Thanks so much for helping me keep up to date.

I've almost finished processing the rest of my Martin Head samples. Some of them have beautifully preserved, diverse assemblages. I can't wait to meet in October. I think we'll have the makings or a really interesting paper.

Hope all is well in Pennsylvania.

Sarah

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Hunt Institute for Botanical Documentation

Date: Wed, 3 Jul 96 11:01:05 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: Fundy work

Dear Alfred,

October it will be. I guess you're right, it's really only 3 months off already!

Hope your dental appointment was not at all exciting.

Sarah

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Hunt Institute for Botanical Documentation

Date: Tue, 2 Jul 96 11:33:57 EDT
To: traverse@ems.psu.edu (Alfred Traverse)
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: Fundy paper

Dear Alfred,

I fear September is not possible for me. If all goes well, I will be in Mongolia from August 31 - September 21, taking some short cores to justify a full-blown study of the Quaternary palynological record of northern Mongolia.

Perhaps we should schedule a meeting in October. A long way off, but at least that way we can have much of our data ready. What do you think?

Happy 45th anniversary!

Sarah

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Palisades, NY 10964
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Fax 914 365-8154
http://www.ldeo.columbia.edu/~sjf/

Hunt Institute for Botanical Documentation

To: sjf@ldgo.columbia.edu
From: traverse@ems.psu.edu (Alfred Traverse)
Subject: Fundy paper

Dear Sarah:

Today is our first day in the lab after a week at our place in the Adirondacks, and a few days in Vermont, celebrating a cousin's 50th anniversary, then to the Catskills for our own 45th! As you know, I guess, we were in Korea and Japan most of May. So, I'm in arrears.

Which brings me to your proposal. This is something I must do--I have been at the Fundy Basin stuff for decades! But August is a problem because of the Copan project, and also a Devonian project (with Ted Daeschler--spores will date the world's oldest amphibian)--both projects are overdue and critical. How about September instead of August? (Copan work is due end of July, and Ted is needing his date for a paper for which abstract is due in August.)

Hope this is possible. Best. Alfred.

P. S. Ted is just back from Morocco, where he is working on Triassic vertebrates. I told him about you.

Hunt Institute for Botanical Documentation

Date: Mon, 1 Jul 96 16:20:02 EDT
To: traverse@ems.psu.edu
From: sjf@ldgo.columbia.edu (Sarah Fowell)

Hi Alfred,

I've just returned from the IPC in Houston. A good conference, though I can see why you had no inclination to visit Houston in June. I met Pierre Zippi there and will, in fact, be consulting for him. Thanks for the sending him to me.

I have several papers I'll be trying to pull together over the summer. Among them is one on the Martin Head/Melvin Beach palynofloras. Would you be interested in meeting late this summer, perhaps mid-August, to try to put our results together? Would that work with your schedule? Let me know.

Hope all is going well for you and Betty in Pennsylvania.

Sarah

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Hunt Institute for Botanical Documentation

Received: from lamont.ldgo.columbia.edu (ldgo.columbia.edu [129.236.10.30]) by p
Received: from [129.236.30.192] (core_kbox_192.ldgo.columbia.edu) by lamont.ldgo
        id AA24839; Mon, 25 Mar 96 15:51:56 EST
Message-Id: <9603252051.AA24839@lamont.ldgo.columbia.edu>
Mime-Version: 1.0
Date: Mon, 25 Mar 1996 15:58:36 -0500
To: traverse@ems.psu.edu
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: abstract
Content-Type: text/plain; charset="us-ascii"

Dear Alfred,

Your most recent package of Triassic and Jurassic reprints just arrived. Thank you for thinking of me again. All the papers of interest, and I see some particularly relevant articles in the issue of Geoscience and Man.

I've made the suggested changes to the abstract. Thank you for reminding me that Canada is part of North America. Sorry about that. The sentence now reads "...basins in the United States, Canada, and Morocco." Better? Also, by early/middle Carnian, I meant that it is either early or middle Carnian. I haven't yet been able to constrain the age any better than that. I have substituted the phrase "Early to Middle Carnian" which I think will get the point across. I'm still not sure about the capital letters on "early" and "middle", but I'll resolve that before sending in the final version.

Hope your new entrance etc. is finished soon and your house free of contractors again.

Sarah

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Hunt Institute for Botanical Documentation

Date: Sun, 24 Mar 1996 16:08:22 -0500 (EST)
From: "Alfred Traverse" <traverse@ems.psu.edu>
To: sjf@ldgo.columbia.edu
Cc:
BCc:
Subject: abstract
X-NUPop-Charset: IBM 8-Bit

Fowell

Dear Sarah:

Stayed home on Friday because contractors are installing a new basement entrance and new windows throughout. Also a new heating plant. It will take a while. Betty and I will alternate at home.

The abstract looks fine. In para. 2 does "early/middle Carnian" mean on the line between early and middle or the early part of middle Carnian? Also, check with an authority about whether it shouldn't be (cap.) Early...Middle.

In para. one, what is "7=BO"?

Also in para. one, you are making me as a native Canadian irked, ahem. How come you don't say, "North America, Canada, Morocco and Africa?" Please clean that up, or the GSC will bar us both.

I think your title is fine. Long, but the article contains a lot of info.

All the best. Alfred.

Hunt Institute for Botanical Documentation

Received: from lamont.ldgo.columbia.edu (ldgo.columbia.edu [129.236.10.30]) by p
Received: from [129.236.30.176] (core_kbox_176.ldgo.columbia.edu) by lamont.ldgo
        id AA11377; Tue, 19 Mar 96 11:21:07 EST
Message-Id: <9603191621.AA11377@lamont.ldgo.columbia.edu>
Mime-Version: 1.0
Date: Tue, 19 Mar 1996 11:27:46 -0500
To: traverse@ems.psu.edu
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: reprints
Content-Type: text/plain; charset="us-ascii"

Hello Alfred,

I've just returned to California to find a package of reprints from you, dated Feb. 29. Thanks much. I am particularly pleased to find copies of your recent papers. I enjoyed reading the paper on Ordovician spores when it appeared in
Geology, and have had many occaisions to refer to it in conversation since. I find one of the most common questions from other geologists is, "When did land plants first appear?" So I refer them to your paper. I'm also pleased to see your paper on the Brandon Lignite. Nan introduced me to Bruce Tiffney when he was visiting Berkeley a couple weeks ago. Quite a character.

I must get busy adjusting to being back at Lamont. I am working on the Triassic abstract for IPC, and will have a version to you by week's end. Thanks again for the reprints.

Best,

Sarah

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Hunt Institute for Botanical Documentation

Received: from lamont.ldgo.columbia.edu (lamont-gate.ldgo.columbia.edu [129.236.
Received: from geo.ldgo.columbia.edu (geo-gate.ldgo.columbia.edu) by lamont.ldgo
        id AA09359; Mon, 26 Feb 96 12:35:41 EST
Received: by geo.ldgo.columbia.edu (4.1/client-1.5-LDEO)
        id AA00841; Mon, 26 Feb 96 12:35:29 EST
From: sjf@lamont.ldgo.columbia.edu (sarah fowell)
Date: Mon, 26 Feb 96 12:35:29 EST
Message-Id: <9602261735.AA00841@geo.ldgo.columbia.edu>
To: traverse@ems.psu.edu
Subject: Re: abstract, etc.
Content-Type: text

Hello Alfred,

I will put you on the abstract. I'm disappointed that you won't be attending the meeting, but I can certainly understand why. I don't really want to go to Houston in June either. What were they thinking when they planned this, I wonder.

I'll send you a copy of the abstract in about 3 weeks for comments.

Best,

Sarah

Hunt Institute for Botanical Documentation

Date: Sun, 25 Feb 1996 12:59:59 -0500 (EST)
From: "Alfred Traverse" <traverse@ems.psu.edu>
To: sjf@lamont.ldgo.columbia.edu
Cc:
BCc:
Subject: abstract, etc.
X-NUPop-Charset: IBM 8-Bit

Fowell

Hi, Sarah:

Funny, I was sitting here at this machine on Friday and said to Betty, "Wish I could be a little mouse in Berkeley for an hour or two to see how those two fascinating ladies are getting along together." Glad to hear that it goes well.

No, I had decided long ago NOT to attend the session in Texas. For one thing we will just be back from Korea and Japan (our host just e-mailed me that they are expecting some lectures from me--in Osaka and Kumamoto--not totally unexpected, but will take a while--as my grandfather would have said, "I don't want to make a hare of myself.") For another, spending my limited travel budget to travel to Houston in summer does NOT appeal.

Regarding the abstract, I would of course be honored to be included. Whether I can contribute enough to earn my keep or not is questionable, I suppose. I'll try. (Our processing of the new samples is almost finished.) I would at least make a good sounding board and resource person.

In response to your meteorological question (which betrays that you don't have the Weather Channel--we don't either, but on the trip to CA and back we LOVED it in motels)--it has remained very cold until a few days ago. Lately we have had forerunners of what my mother called the "equinoctial winds." And it has been in the 40s and 50s. Still lots of snow, but it's going fast. At Alphabet Acres we have snowdrops in bloom--no crocuses yet. This a. m. while I was dressing I watched out the window as a turkey vulture tried to devour a possum roadkill near our mailbox. Vultures seldom will work on a carcass on a road, but this one must have known it was Sunday morning. When the occasional car came, he/she took off, took one long circle at about 6 ft. elevation and dropped back on the road, precisely at the right spot.

Please give Nan our best.

Cheers. Alfred.

Hunt Institute for Botanical Documentation

Received: from lamont.ldgo.columbia.edu (lamont-gate.ldgo.columbia.edu [129.236.
Received: from geo.ldgo.columbia.edu (geo-gate.ldgo.columbia.edu) by lamont.ldgo
        id AA07004; Fri, 23 Feb 96 17:28:35 EST
Received: by geo.ldgo.columbia.edu (4.1/client-1.5-LDEO)
        id AA15131; Fri, 23 Feb 96 17:28:32 EST
From: sjf@lamont.ldgo.columbia.edu (sarah fowell)
Date: Fri, 23 Feb 96 17:28:32 EST
Message-Id: <9602232228.AA15131@geo.ldgo.columbia.edu>
To: traverse@ems.psu.edu
Subject: IX IPC
Content-Type: text

Fowell

Hello Alfred,

Things are going well here in California. Nan got some very nice palynofloras out of her Colombian material, and I spent a couple days this week scanning her slides. It's very interesting for me, at this point, because of the mixture of Mesozoic spores and early angiosperm pollen that constitute the Cretaceous assemblages. Many of the species are new to me, and some of them are new to Nan. But hopefully we'll be able to put our heads together and identify them.

Are you planning to attent the ninth IPC this summer in Houston? This week I realized that the abstract deadline is March 31. I am thinking of giving a poster session on palynofloras from the Fundy and Argana basins. From my preliminary surveys of my slides, it appears that the assemblages from these "drier" basins differ somewhat from other Newark Supergroup basins. And perhaps have more in common with some of the southwestern assemblages. Clearly I need to do some work to quantify my preliminary observations, but I'm thinking of submitting an abstract along these lines. Would you care to coauthor an abstract with me? I'd like to include as much data as possible from the Fundy assemblages, because I think these palynofloras are of significant interest as the oldest, most diverse assemblages yet recovered from the basin. Are you interested? Let me know. I'm going to try to come up with some more concrete conclusions (or at least hypotheses) in the next few weeks, and I'd be happy to incorporate any ideas you may have about the material.

How are things in Pennsylvania? Has spring arrived yet? I have lost my perspective on the weather, living in California. Here it is sunny and in the 60s most days.

Best,

Sarah

PS: You can reply to my Lamont e-mail address. I'm reading my mail regularly.

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Mime-Version: 1.0
Date: Tue, 6 Feb 1996 14:09:57 -0500
To: traverse@ems.psu.edu
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: pesky paper
Content-Type: text/plain; charset="us-ascii"

Dear Alfred,

The Russian woman's name is Greta M. Brattseva. Her address (as best you could tell) is Institute of Geology, Academy of Science, 7 Pyzhevskii Pereulok, 109017 Moscow, Russia.

Glad we figured that out. I didn't want to be credited with a dinocyst paper either!

Thanks for taking care of this matter. I'm busy trying to tie loose ends before I depart.

Sarah

Sarah J. Fowell
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Mime-Version: 1.0
Date: Mon, 5 Feb 1996 11:40:07 -0500
To: traverse@ems.psu.edu
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: dinocysts
Content-Type: text/plain; charset="us-ascii"

Dear Alfred,

I just received your letter, with the baffling enclosure. I'm afraid I'm as confused as you are. Though perhaps the dinocyst article appeared in the same issue of RPP as our recent paper? Sometimes foreigners get the authors of the various papers mixed up. Otherwise, I haven't a clue as to how our names got attached to the paper she (he?) is seeking.

Do you have that issue of RPP available? I received reprints, but not the actual journal. Perhaps if we can find the correct authors, we could forward this note to them.

I'm leaving on Thursday for California. At the moment I'm packing reprints etc. into boxes. Though the quality of the Berkeley library lessens the need to take everything with me. I'm very much looking forward to working with Nan during the next few weeks. We'll be in touch.

Best,

Sarah

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Hunt Institute for Botanical Documentation

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30 January, 1996

Dr. Sarah J. Fowell
Lamont-Doherty Geol. Observatory
Columbia University
Palisades, NY 10964

Dear Sarah:

Almost tried this by e-mail, but there are some things that still go better by snail-mail, and this one of them.

The enclosed item stunned me. Surely you didn't have me as co-author about dinocysts?! I thought that both of us were relatively innocent of such matters. Can you illuminate?

There's also the problem that he/she (100x more likely to be she) provides no address. I assume this is: Greta M. Brattseva, Institute of Geology (G. I. N.), Academy of Science, 7 Pyzhevskii Pereulok, 109017 Moscow, Russia.

All the best, as ever.

Yours very truly,

Alfred Traverse

enclosure

Hunt Institute for Botanical Documentation

Date: Mon, 29 Jan 1996 13:42:10 -0500 (EST)
From: "Alfred Traverse" <traverse@ems.psu.edu>
To: sjf@ldgo.columbia.edu
Cc:
BCc:
Subject: Fundy Basin work, etc.
X-NUPop-Charset: IBM 8-Bit

Dear Sarah:

Nice to hear from you. I will be enjoying the image of you two ladies working away in that building that now seems familiar to me.

Spring will be no more hectic than other times here, but we are going to Korea and Japan for May, so from many points of view summer is probably more realistic for a get-together on the Fundy sporomorphs. Should be fun.

I still haven't opened all the "snail mail," but am beginning to see some light at the end of the proverbial tunnel. The weather here, of course, is a major obstacle all the time.

All the best. Alfred.

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Mime-Version: 1.0
Date: Sun, 28 Jan 1996 13:42:33 -0500
To: traverse@ems.psu.edu
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Re: report in
Content-Type: text/plain; charset="us-ascii"

Dear Alfred,

Welcome back. I'm glad you had a good trip. I visited Death Valley 8 years ago, and I too thought it was beautiful and very unusual.

I go to California on Feb. 8, and will start working with Nan shortly thereafter. I very much enjoyed meeting her in December, and (as you probably know) we have tossed around some ideas for collaborative projects. I'll probably start by taking a look at some of the Cretaceous pollen from her Columbia samples. I'm excited about that. Nan has been very helpful to me, so I'm hoping I can produce some good results for her in turn. Thank you very much for the introduction.

I have had good luck with some of the NB samples. Martin Head 4, 10 and 11 all have nice assemblages, as does Melvin Beach 7. So far I have looked most closely at Martin Head 10, which I am dating as Carnian based on the presence of Lagenella martinii, Duplicisporites cf. granulatus, and Brodispora striata. There is also an abundant monosaccate species which I haven't positively identified. It looks like Cordaitina minor, but it has a raised trilete mark on the saccus. I have not seen such a trilete mark in photos of C. minor, but I still must go look up the species descriptions before I rule it out.

At any rate, the pollen is well-preserved and the assemblages diverse and interesting. I think we should write a joint paper on this material soon. Along with the assemblages you previously collected from Martin Head, these are the oldest and most diverse palynofloras yet recovered from the Fundy basin. What is you schedule like this spring? Shall we bring our photos and slides together at some point and begin to write up?

Hope you are fairly well dug out by this time. Thanks again for the extra reprints.

Sarah

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Date: Sun, 28 Jan 1996 13:08:35 -0500 (EST)
From: "Alfred Traverse" <traverse@ems.psu.edu>
To: sjf@ldgo.columbia.edu
Cc:
BCc:
Subject: report in
X-NUPop-Charset: IBM 8-Bit

Dear Sarah:

Yours of 3 Jan. came when we were in, lets see, Ft. Stockton, Texas.

We are now back (for three days so far) and literally and figuratively digging out. It was a great trip. Delivery of the materials to Nan went off without a hitch. For me the scientific highpoint of the trip was Death Valley, which is breathtaking and awesome. The other things were fun, but mostly not novel. We drove our new truck 8,000 miles.

Nan told me about your visit and efforts she's making to get ready for same.

Bob Booth (recent grad) is processing the samples you got for me in NB.

Among the accumulated items of mail was a big package from BC--all about (imaginary?!) children he has discovered, and his contacts with an alien nation of some sort, etc., etc. I wonder if you saw it. He should be hospitalized.

Keep in touch. All the best. Alfred.

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Mime-Version: 1.0
Date: Wed, 3 Jan 1996 13:10:58 -0500
To: traverse@ems.psu.edu
From: sjf@ldgo.columbia.edu (Sarah Fowell)
Subject: Thank you
Content-Type: text/plain; charset="us-ascii"

Dear Alfred,

Thanks so much for sending the box of reprints to me. It contained many papers that I don't have copies of, and I was particularly pleased to have a reprint of Morbey's Paleontographica paper. I have a xerox of that important contribution, but it is so much nicer to have an original.

I met with Nan Aherns in December and we have made plans for collaboration during my next visit in February. She was very pleasant in person and seems to have some really good projects in the works. Our ideas for collaboration are rudimentary at present, but hopefully our work together will grow into a proposal that will be advantagous to us both. I'll let you know how things proceed. I'm very excited about spending some time working with Nan in February. I think it will be fun.

Hope your trip west was enjoyable. Happy New Year to you and Betty.

Sarah

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