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Trans-Atlantic Exchange of Geological Ideas in the 19th Century

EDITORIAL
Earth Sciences History: A Change in Style and Format

Gerald M. Friedman

Editor, *Earth Sciences History*
Department of Geology
Brooklyn College of the City University of New York
Brooklyn, NY 11210
and
Northeastern Science Foundation, Inc.
Rensselaer Center of Applied Geology
15 Third Street
P.O. Box 746
Troy, NY 12181-0746

With this issue, *Earth Sciences History* completes its first nine-year cycle of existence. The next issue (Volume 10, Number 1) inaugurates our second decade of publication, and signals some exciting changes for our journal.

After completion of nine years of production via a desk-top publishing system located at the Rensselaer Center of Applied Geology, the headquarters of the Northeastern Science Foundation, *Earth Sciences History* moves on to its next phase of improvement: printing by a commercial printer using the time-honored (though at the same time state-of-the-art) methods of photo-typesetting and large-scale offset printing. The purpose of this change is to bring the quality standards of *Earth Sciences History* up to the level of those journals for which commercial publishers charge many hundred or even thousands of dollars per year. Allen Press Inc. has been selected to print this journal starting with the next issue.

I have worked with Allen Press before. As Editor of the *Journal of Sedimentary Petrology* I advocated a shift from another printer to Allen Press. This shift was accomplished during my tenure of office as Vice President of the journal's sponsor (the SEPM, or Society of Sedimentary Geology). A testimony to the consistent quality and service that Allen Press provides is the fact that Allen remains the printer of the *Journal of Sedimentary Petrology* today, almost twenty years later.

Going to a commercial printer has its inherent risks and problems. Although a better product results, we have to go to press much earlier, and the question of rising costs may sooner or later hamper us. Along with printing costs go expenses unrelated to printing, such as storage of current and past issues, back-issue fulfillment, maintaining mailing lists, packing, shipping, address-file maintenance, and renewal services. Up until now the Northeastern Science Foundation has provided most of these services free of charge to the society. Fulfillment services (address-file and membership-list maintenance) alone will now cost $5 per member. At the 1990 individual membership rate of $20, that leaves only $15 for editorial expenses, printing of the journal, postage and expenses of the secretary's and treasurer's offices. Subtracting postage, only about $13 (less for foreign members) is available.

Our current contract with Allen Press is very favorable -- other printers whom I contacted privately did not believe that we could obtain such excellent terms. The immediate scare is a price increase after the first year; in fact immediately after our contract was signed I received my first letter relating to "revision charges".

Such "surprise costs" were not a factor during the past nine years, during which the production of *Earth Sciences History* was a strictly in-house matter. The journal has been run as a low key, shoestring operation, with the Northeastern Science Foundation, Inc. (a not-for-profit university-affiliated corporation) providing the kind of free services for which other societies expend scarce funds, and contributing close to $20,000 to support our journal and thereby maintain a low membership subscription rate. To see the effects of this nurturing relationship between foundation and society, consider the following comparison in price structure: For 1990 *Earth Sciences History* charged $20 per year for members and $25 for institutions; whereas the *Journal of the History of Biology* charged $44 to members and $102.50 to institutions. The purpose of this section of this editorial is not only to inform our membership, but also to take the opportunity to express our thanks to the foundation's board of directors for their continuing support of *Earth Sciences History*.

We now have a FAX machine on the premises and anticipate that it will be a help in reaching our authors, reviewers, and associate editors, when we need information quickly. This is particularly important during the last stages of review and during the editing process. However, our FAX is <u>not</u> to be used for submission of entire manuscripts or revisions. Our FAX number, (518) 273-3249, should only be used for priority-type items of minimal size.

Earth Sciences History was recently reviewed in *ISIS*. The review was favorable, and as editor I appreciate David Oldroyd's (University of New South Wales, Australia) input. He noted that the reproduction of illustrations is of poor quality. Our move to a commercial printer should remedy this. I differ with Oldroyd, however, in his statement that the histories of mineralogy, petrology, and geochemistry describe the "bread and butter" of geology. From the nineteenth century on, culminating in modern concepts and controversies of geology, geological "bread and butter" has consisted of softrock geology, structural geology, geophysics and paleontology. To me, as a former hardrock mineralogist-petrologist-geochemist -- well aware of the history of these specialties -- and more recently a sedimentologist-stratigrapher, I know that the science grows where the jobs are, and they are not in the hardrock field. I like Oldroyd's conclusions:

> "*Earth Sciences History* is scarcely touched by current controversies in sociology of science and even studies in philosophy of science. But now that the journal is well established, with a healthy number of subscribers, we may hope that it will gradually embrace and endorse such perspectives, thereby facilitating the closer union between scientists and historians of science envisaged by its founders."

Cover photo: Alfred Selwyn in the late 1860's.

TRANS-ATLANTIC EXCHANGE OF GEOLOGICAL IDEAS IN THE 19TH CENTURY

International Commission on the History of Geological Sciences INHIGEO

A Symposium held at the XXVIII International Geological Congress, 1989

Washington, D.C., U.S.A.

INTRODUCTION

On July 11, 1989, an INHIGEO Symposium entitled "Trans-Atlantic Exchange of Ideas - 19th Century" was held at the 28th International Geological Congress in Washington, D.C. The cochairmen of the symposium were G.Y. Craig, E. Dudich, and A.V. Carozzi. The program consisted of eight oral presentations. Six of the resulting papers, to which were added two other papers pertinent to the subject, form this issue of Earth Sciences History.

The contributions of the various authors show clearly that the fascinating subject of trans-Atlantic exchanges of geological ideas during the 19th century is a multifaceted question which has just been opened to investigation. Additional research in depth is needed on both sides of the ocean.

In the search for a tentative trend, one could reasonably argue that at the onset of this exchange the current was overwhelmingly westward, and that toward the middle of the century an eastward countercurrent developed. However, this interpretation is most probably an oversimplification which further research may appreciably modify because the means of dispersal of ideas were extremely complex and may have randomly interfered. Dispersal occurred mainly through intricate patterns of contact between individuals and scientific societies by letters, exchanges of publications, shipping of collections, and by "scientific migrants."

The westward flow of ideas inserted itself directly in the controversy between Werner's neptunism and the slow but steady progress of Huttonian concepts. Both approaches were evaluated by American geologists in the light of their personal experience. Very strong was the Wernerian influence on Brazil when Brazilian students, trained at the Bergakademie of Freiberg, returned home to participate actively, together with German experts, in the numerous mining activities of that country. In that respect, a study of other Latin-American countries would certainly yield interesting results which might show that the only positive aspect of neptunism is to be found in improved mining practice rather than in theoretical concepts such as the universal ocean or the aqueous origin of granite.

A real and complex exchange of viewpoints in both directions occurred with the "new stratigraphy" or the use of fossils in stratigraphic analysis following the ideas of William Smith. The French geological community became strongly interested in North American geological phenomena and investigations to an apparently unusual extent. This situation, which further studies might reveal characteristic of other European countries as well, such as Italy, Spain, Portugal, Hungary, and Switzerland, also indicates a comparatively early maturity of American geological sciences.

Other indirect routes of transmission of knowledge went even through Australia while the countercurrent pertaining to American theoretical ideas in structural geology, geomorphology, and glacial geology influenced European thinking.

Unquestionably, the papers of this INHIGEO symposium, besides their intrinsic interest, are highly provocative in providing a small sample of this phenomenon of dispersal of ideas. This sample, by no means statistically valid, becomes therefore a powerful incentive for further investigation fulfilling the purpose of the symposium which was to focus on an attractive problem, establish its state of the art, and generate enthusiasm.

My thanks are due to Gerald M. Friedman, editor of Earth Sciences History, for extending a warm and most welcome invitation to publish the results of this symposium, and to the managing editor Steve Buttner for his devoted help in solving a number of technical and editorial problems. I wish also to acknowledge the indispensable help of G.Y. Craig and E. Dudich who acted with me in a critical reviewing committee for the papers.

Albert V. Carozzi, Symposium Editor
Department of Geology
University of Illinois at Urbana-Champaign
Urbana, IL 61801-2999