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MONUMENTS TO GEOLOGISTS AND GEOLOGICAL PRACTICES

EDITORIAL

A DOUBLE-HEADER

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I. EARTH SCIENCES HISTORY: CURRENT STATUS AND PHILOSOPHY

You will not believe it! Let me quote from a recent editorial which I wrote on the occasion of the ten-year jubilee of the Northeastern Science Foundation, a not-for-profit corporation which serves as editorial headquarters for this journal: "over the last several years the Foundation has developed considerable expertise in the areas of artificial intelligence, computer simulation modeling, use of CAD systems in research programs, manuscript and map computerization, statistical evaluation techniques, and research computer workstation design." As soon as this editorial appeared in print it happened: someone tampered with our computer. We do not know exactly what happened, but reconstruct that some kind of vehicle, passing our building, erased parts of our computer file holding our membership list. You may also have guessed that this event occurred just before the last issue of the journal was scheduled for mailing. So if you received two issues or no issues or have some other related complaint please direct it to our computer. I was reminded of a recent oversold flight from which a computer-command evicted me. The ground staff was courteous but firm; the computer had no instructions that hotel and meals were at the airline's expense. So I arrived home a day later with a lighter pocket book.

Our society has an unpaid behind-the scene angel who holds the editorial office together: Sue Friedman, who spent long hours reworking the Society's membership list. I may add that as part of her unpaid duties as assistant to the unpaid Editor, she handles almost all the Society's mailings, including back orders and complaints from universities whose journals disappear from the shelves and request free replacement, and keeps track of members and subscribers. When the journal is mailed out she addresses envelopes, stuffs them, bundles them in sacks, and trudges them on a wagon to the post office. For overseas shipments she packs them in boxes, carries them to the car, drives them to the United Parcel Service in a nearby town, and there maneuvers them by physical lifting and cart transfer to the counter for shipment. The officers and members owe her a real debt. More mature societies have a paid staff for this kind of work.

Beginning with this issue our publishing routine has changed; its purpose is to improve the appearance of the Journal. With the innovation of desk-top publishing we can make each issue more consistent in format. Instead of requesting camera-ready copy

from authors we ask for a computer disk or a copy which our optical character scanner can read. With this kind of in-house operation our society can still operate on a shoestring. This should be evident from the society's dues structure.

Following my last editorial some members in their letters raised the question of the quality of writing of authors whose mother tongue is not English. In our last issue we had papers which Spanish- and German-speaking authors contributed whose English does not compare with that of native speakers. Other journals face the same problem. As an international journal we welcome the contributions of authors from non-English speaking countries and appreciate their problem of translation. Your unpaid editor has spent a large share of his time in upgrading contributors' English, especially that of authors who translated from foreign languages. I would welcome volunteers from the society who wish to help edit and/or rewrite a paper from foreign-language authors. English today fills the void which German and French played in the 19th and early 20th century. Then German was the language of science and French that of diplomacy and culture. As an example, the founder of modern Germany, *Frederick the Great* spoke only French at court; his German was poor and faulty. In a recent conversation with a European colleague I apologized that English-speaking academics had an unfair advantage. He was not envious, and simply said: I hope you make the most of it.

In my last editorial I raised the question of page contributions. Incoming editor Harvey Blatt wrote in his editorial in the first 1989 issue of the *Journal of Sedimentary Petrology* the following paragraph which I quote in its entirety: "PLEASE include page charge costs in your research and contract proposals. And if the proposal is funded but the budget trimmed, PLEASE don't head immediately for the page charge item with your red pencil. Try to leave something for page charges in the revised budget. We will be grateful for any amount, large or small. Every little bit helps. If an author does not have grant money to contribute, perhaps his/her institution will help us out, and a donation of \$100 is probably within the means of most. Can you request at least this amount from your chairman or supervisor without endangering either your tenure, promotion, or hoped-for salary increase? More money does not guarantee a better product, but lack of money does mandate limitations. Of course, acceptance of your manuscript does not

COVER ILLUSTRATION: Upper left: bust of Sir Charles Lyell (1795-1875) in Westminster Abbey, London, England. Upper right: Discovery well in Indonesia. Left center: Tombstone of botanist-carbonate geologist Ferdinand Cohn (1776-1898) and his wife Pauline, Wroclaw, Poland, formerly (Breslau, Germany). Center: Grave of Amos Eaton (1776-1842), Troy, New York. Right center: Monument to William Smith (1769-1839) in the Cotswolds of England. Below Eaton and Smith: Swiss 20-franc

note honoring Horace-Benedict de Saussure (1740-1799). Lower left: Monument to reflection seismograph, Arbuckle Mountains of Oklahoma. Center bottom: Norwegian stamp in honor of V.M. Goldschmidt (1888-1947). Lower right: Street named in honor of geologist Ramiro Fabiani (1879-1954); Milan, Italy (Photograph by G.M. Friedman, Editor; see editorial).

depend on whether you are able to contribute toward page charges. Only merit is relevant in this regard." Please note that because of the voluntary nature of these contributions we prefer for our journal the term "page contributions" instead of "page charges".

The next issues of this journal will be thematic and include the following topics: the idea of time: changing concepts of the antiquity of Man and the Earth; history of vertebrate paleontology; history of oceanography; 19th century Trans-Atlantic exchange of geological ideas; and history of polar research. These thematic topics are most exciting.

A recent letter arrived from Charles J. Hoke who wrote "I read each copy of *Earth Sciences History* with much interest and it occurs to me that I seldom see any reference of Hugh Miller, the Scot, self-educated in geology. He published a series of volumes of which I have two sets. He also wrote for the old publication

II. MONUMENTS TO GEOLOGISTS AND GEOLOGICAL PRACTICES

During the past two years I visited many countries stretching from Turkey and Israel to India and Japan, western, central, and eastern Europe, and countries of the western hemisphere from Canada to Mexico, Venezuela, and Colombia. On these trips I try to locate and identify monuments honoring earth scientists. My observation is that geologists and other earth scientists rate low on the scale of recognition, so few monuments have been erected in their honor. In most capitals of the world generals and politicians sit erect on horseback in the center of public parks and squares. However, although uncommon, monuments honoring geologists do exist. In the little town of Cortina D'Ampezzo in the northern Italian Alps sits a gracious monument to Dèodat de Dolomieu (1750-1801), also known as Dieudonné Sylvain Guy Tancrede de Gratet de Dolomieu, in whose honor Nicolas Théodore de Saussure (1765-1845), the son of the more famous Horace-Bénédict de Saussure (1740-1799), named the rock "dolomie." The anglicization of "dolomie" became dolomite, as introduced in R. Kirwan's second edition of mineralogy (1794).

In commercial Switzerland honor lies in the realm of money, not monuments: the 20-franc bill of the Swiss National Bank carries on one side a portrait of the elder Horace-Bénédict de Saussure (1740-1799) and on the reverse side a cross section of an ammonite and a party of geologists who with their equipment assail an Alpine range (see front cover). Coming back to Italy street names in Milan honor geologists (see front cover). Even their profession of geologist, geologo in Italian, and their birth and death dates are recorded on the street signs. Alberto Sanguinetti (1931-1958) and Carlo Janozzi (1925-1958) lost their lives in geological field work, and Ramiro Fabiani (1879-1954) (see front cover) and Guido Bonarelli (1871-1951) made their reputation in Cretaceous stratigraphy; a black shale overlying Cenomanian strata is known as the Bonarelli layer. I believe these street signs in Italy, honoring geologists, are unique. On the campus of the State University of New York at Binghamton a road has been named after Glen G. Bartle (1899-1969), a geologist who was recognized for his contributions as the President of the University's Harpur College rather than for those as a geologist. On my arrival in Troy, New York, in 1964 as a professor of geology at Rensselaer Polytechnic Institute, the Institute provided me with a lovely home on Eaton Road, named after Amos Eaton (1776-1842), co-founder of American geology and pathfinder of American stratigraphy. Unfortunately no one in the town and barely anyone on campus recognized the name. In fact, the Amos Eaton Building on campus houses the Department of Mathematics; opinion prevailed on campus that Amos Eaton "was a famous mathematician."

In England and Scotland where geology emerged as a science, geologists received more credit. In the center of a beautiful Cotswold Village the monument to William Smith (1769-1839) (see front cover) occupies a central public park; this monument credits him as the father of British geology. This monument, erected in 1891 through the efforts of the Earl of Ducie, could more appropriately have recognized him as the father of world stratigraphy. In the

"Witness", a Presbyterian publication out of Edinburgh, Scotland. I have found his works most interesting. The late Dr. Cary Croneis once told me, "Miller sometimes confused his geology and religion", but nevertheless regretted that Miller had been dropped from U.S. geological reference about 1920. I would like to see some reference made of Miller in some future issue of *Earth Sciences History*." As owner of all geological publications of Hugh Miller I keep track for insurance purposes of their value. As an example, "The Cruise of the Betsy; or, a summer ramble among the fossiliferous deposits of the Hebrides; with rambles of a geologist; or ten thousand miles over the fossiliferous deposits of Scotland", first edition, 1858, increased in value, as follows: 1982 \$36; 1983 \$32; 1984 \$45; 1987 \$117; 1988 \$117. These figures show that someone still appreciates Hugh Miller. With this message, and speaking of the worth of geologists and their publications I come to the subject of geologists and monuments.

Yorkshire Dales National Park, in the center of the village of Dent, is a memorial to the Reverend Adam Sedgwick (1792-1873), founder of the Cambrian system and with Sir Rodney Murchison (1792-1871) of the Devonian system and pioneer of the geologic time scale. In Scotland, a monument immortalizes the famous team of John Horne (1848-1928) and Benjamin N. Peach (1842-1926).

In London's Westminster Abbey, the British elite has its tombs and memorials dating back to the Middle Ages. In my quest for a photogenic bust of the Reverend William Buckland (1794-1856), first professor of geology at Oxford University, I visited Westminster Abbey as Buckland had also served as the Dean of Westminster. I approached a functionary sitting along the Abbey's wall who explained that he (the functionary) has "sat on this chair for the past fifty years and no one has ever asked me about Buckland." He initially claimed that Buckland is not located in the Abbey. On second thoughts, however, he consulted a book, then seemed flustered and surprised that "a monument should be right here." He looked up at the wall and there above him on the Abbey's wall was Buckland's bust. This bust stares across the Abbey and looks into the eyes of another bust, that of Buckland's prize student, Sir Charles Lyell (1795-1875) (see front cover). Whether by chance, accident, or design, it is certainly fitting to find these two pioneers of geology looking at each other. Lyell's bust overlooks his tomb beneath the Abbey floor across which stampeaded literally thousands of the curious each day on their way to the tomb of the beheaded Mary Queen of Scots. 73 Harley Street is the site of the London home of Lyell. A historical marker on this house notes that here stood Lyell's home which became the property of W. E. Gladstone (1809-1898) who served as Prime Minister of the United Kingdom and the then British Empire. Where is there a geologist today whose house would be purchased by a statesman of such stature?

The headquarters of *Earth Sciences History* is a building named the Rensselaer Center of Applied Geology after a then well known, but now largely forgotten nineteenth-century geologist Jeremias Van Rensselaer (1741-1810) who wrote one of the first geology textbooks published anywhere. His specialty was evaporite geology. His second cousin Stephen Van Rensselaer (1764-1829) whose monument is the Rensselaer Polytechnic Institute in Troy, New York, commissioned studies of the geology of central New York State and of the Erie Canal route. He considered his geological studies part of a grander scheme, a plan "for large and generous contribution to the science of geology" (Barnard, 1839). However, beyond his interest in geology stood out Van Rensselaer's service as Lieutenant Governor of the State of New York and as General of the New York State militia. A bust of Van Rensselaer is currently in storage in the Archives section of the university's library.

In Albany, New York, a commemorative bronze tablet honors the former home of Ebenezer Emmons (1799-1863), junior professor at the Rensselaer School, member of the New York State Geological Survey, State Geologist of North Carolina, and father of

the Taconic System. In 1839 his house served as the site where the American Geological Society, later the American Association for the Advancement of Science, was founded. The plaque honors this event. Emmons' later home in North Carolina has been dedicated as a public site.

Of course local cemeteries hold the monuments of tens of thousands of geologists. One of these graves, that of Amos Eaton, will be visited on the forthcoming field trip T169 of the International Geological Congress (IGC) titled "Boston to Buffalo in the footsteps of Amos Eaton and Edward Hitchcock." At his grave and monument in Troy, New York (see front cover), the participants of the IGC field trip will pay their respects. Less respectful was the treatment of the grave of Ferdinand Cohn (1828-1898) (see front cover), professor of botany, whose geological studies of modern carbonates, especially aragonite pisolites from Carlsbad, Czechoslovakia, have become classical. Located in the former German city of Breslau, now Wrocław, Poland, the Nazis not only desecrated his grave, but smashed his gravestone into hundreds of fragments. Through the caring work of Magister Maciej Lagiewski of the Architectural Museum of Wrocław this grave has been restored, and I am grateful to Mgr. Lagiewski for taking me to Cohn's grave. On a recent visit to a cemetery in Aberdeen, Scotland, I discovered the grave of a geologist, recipient of the prestigious British Doctor of Science degree. Unfortunately, I could not locate his name in the requisite old membership lists of the Geological Society (of London).

Amos Eaton's prize student was James Hall (1811-1898), father of American paleontology, and stratigraphy, father of the geosyncline, and the single most influential American geologist ever. Hall, to whom *Earth Sciences History* devoted an entire issue (v. 6, no. 1, 1987), received his degrees from the Rensselaer Polytechnic Institute, in 1831 and 1832. The Institute dedicated a freshman dormitory in his honor, Hall Residence Hall, known on Campus as Hall Hall. A plaque at the entrance to this residence recognizes his service as Professor of Geology at the Institute. Unfortunately, as with many monuments, the pigeons and the weather have somewhat defaced Hall's plaque. When writing this editorial I phoned the chief counselor at the residence to ask if he knew about the person after whom his residence was named. He conceded to have seen the plaque which is prominently displayed at the entrance, but recalled only that it was named after a "Peter or Richard Hall, a former Professor of Mathematics or Geology". At least this counselor was partly right. Hall Residence is located next to Nason Residence Hall named after Henry B. Nason (1831-1895), active founder of the Geological Society of America. Nason inspired Washington A. Roebling of Brooklyn Bridge fame to establish systematic mineral collections, one of which became the famous Roebling collection of the Smithsonian Institute. The largest party ever thrown by the Rensselaer Polytechnic Institute was in commemoration of Nason's 25th year on the faculty. A phone call to the councillor at Nason Residence Hall confirmed her knowledge of the presence of a plaque at the entrance to the residence, but she had no notion whatsoever about the message which this plaque carried.

On a visit to the campus of the University of China in Beijing, I made my pilgrimage to the grave of Amadeus William Grabau (1870-1946). The Chinese academic community was grateful to Grabau for his significant contributions to the geology of China and to the education of several generations of geologists. A memorial park honors him which preserves his grave, tombstone, and a rock monument. This monument consists of a huge block of limestone in which large holes remind the visitor what the process of karstification may create in limestone bedrock. This memorial site with grave was moved from an old location as the campus was relocated in 1982.

On May 6, 1989 Brooklyn College's Department of Geology

dedicated a memorial monument of Precambrian (Grenville) garnet rock to the department's founder professor Helen A. Biren (1907-1988). This beautiful rock from Gore Mountain in the Adirondacks, New York is composed of red almandine garnet lined by reaction rims of black hornblende in a coarse-grained amphibole gabbro. A plaque commemorates her contribution.

Few geologists have been portrayed on commemorative stamps, but the Norwegian government issued a Victor M. Goldschmidt (1888-1947) stamp to honor the founder of modern geochemistry (see front cover and book review in this issue). When I served as president of the Society of Economic Paleontologists and Mineralogists (SEPM) my year of service overlapped with the 50th anniversary of the Society. I hoped to convince the Postmaster General that a stamp should be issued in SEPM's honor. Senator Tower of Texas helped in this attempt, but our consolation prize was a letter stating that we should wait another fifty years to have a stamp issued on the centenary. In his letter the Postmaster General included stamps showing beautiful minerals and gems and reminded us that "geology was not forgotten".

Monuments have been created to commemorate the discovery of techniques in geology which provided breakthroughs in our science. An example is the monument to the reflection seismograph located in the Arbuckle Mountains of Oklahoma (see front cover). Composed of granite it relates that Oklahoma is the birthplace of the reflection seismic technique. The monument states that "the Arbuckle Mountains were selected for a pilot survey of the technique and equipment, because an entire geologic section from the basal Permian to the basement mass of granite is exposed here." The Oklahoma Historical Society together with the Oklahoma-Kansas Oil and Gas Association erected this monument in 1983. On the banks of the Arkansas River, in Tulsa, Oklahoma, a monument of the same granite that commemorates the seismograph is in honor of "Tulsa Geology and Petroleum" created by the Tulsa Geological Society.

In Indonesia a memorial recalls the discovery of one of the largest oil fields in that country. Rumor has it that the Sumur Talang Akar No. 6, the discovery well (see front cover), was drilled on Christmas day and between Christmas and New Year when management had gone home. When the managers returned after New Year they found that the drillers had discovered a gusher several thousand feet below management's intended objective. If management would have remained on duty this major discovery would have been missed.

On a recent visit to Central Park in New York City, I took a tour of "Who's Who in Central Park: Test your knowledge of history and literature of statues of the great and the near great". I explained my interests to the tour guide who thought that geologists "do archaeology".

On lecture tours I have raised my favorite topic of monuments to geologists. On one such occasion I showed a photograph of Dolomieu's bust to a group of geophysicists and emphasized that this monument is that of a geologist, not of a geophysicist. I challenged my audience to tell me of a monument to a geophysicist. A grouchy geophysicist commented "in my area of operation there are lots of monuments to geophysicists: we call them dry holes!"

REFERENCE

- Barnard, D.D., 1839, A discourse on the life, services and character of Stephen Van Rensselaer; delivered before the Albany Institute, April 15, 1839; Albany, Hoffman and White, 144 p.