

BOOK REVIEWS

VOLCANISM IN HAWAII. Edited by R. W. Decker, T. L. Wright, and P. H. Stauffer. U.S. Geological Survey Professional Paper 1350. U.S. Government Printing Office. 1987. 2 Vols., 1667 p., hardbound. \$95.00

The 62 chapters reflect an interdisciplinary approach to the understanding of the behavior of principally the Kilauea and Mauna Loa volcanoes on the Island of Hawaii. The contributions are primarily authored by a wide diversity of staff members of the U.S. Geological Survey and by guest investigators from academic institutions. The structure and tectonic setting of the volcanoes, physical and chemical properties of the erupted materials, history and evolution of volcanic activity, and the origins of Hawaiian volcanology as well as the history of the Hawaiian Volcano Observatory are covered. These volumes celebrate the 75th anniversary of the establishment of the Observatory by Thomas A. Jaggar.

Each chapter has an introduction in which the development of concepts is usually presented with extensive reference documentation. The historian of science, however, will probably benefit by beginning with Chapter 36 that provides a superb photo-glossary of the principal features of Hawaiian volcanism. After viewing those exciting pictures, the colorful background and development of the Hawaiian Volcano Observatory given in Chapters 60-62 will become a more meaningful experience.

The systematic study of Hawaiian volcanism begins with the 1840 U.S. Naval Exploring Expedition under the command of Lt. Charles Wilkes. On the staff were nine civilian experts in zoology, botany, philology, and geology. The geologist was James Dwight Dana, the first American volcanologist and author of "Systems of Mineralogy," published in 1837. Because Lt. Wilkes considered "naturalists" as more or less interchangeable, Dana was sent off after six days on Kauai and one day on Kilauea to look at coral islands in the South Seas; his colleague, Charles Pickering, the zoologist, was assigned the task of observing the volcanoes. With good fortune, Pickering found Kilauea in continuous summit eruption and the great 1840 flank eruption had just taken place. Dana's account of the volcanology is, therefore, based on the notes of Pickering and Wilkes. In addition to his own one-day study of Kilauea, Dana's thinking about active volcanoes was greatly influenced by their observations, and changed very little even after his return visit in 1847.

The first geophysical observatory in Hawaii was established by Wilkes on top of

Mauna Loa. Much of the data collected, preserved in the U.S. National Archives, has not been published. The Hawaiian Volcano Observatory (HVO) was established in 1912 largely through the efforts of Professor Thomas A. Jaggar (1871-1953) of M.I.T. with the local support of Lorrin A. Thurston (1858-1931) who had been one of the leaders in the overthrow of the native monarchy and a prominent businessman. As today, the scientific purposes were sold to prospective financial supporters to satisfy the humanitarian need for "earthquake prediction and methods of protecting life and property...." Chapter 61 describing Jaggar's intensive efforts is especially valuable also for the listing of sources of historical documents not readily available (pp. 1630-31). The chronological lists (with an alphabetical appendix) of HVO staff members is given in Chapter 62. It does not include, but acknowledges profusely, the contributions of hundreds of Guest Investigators and Volunteers who also served. It is a rare volcanologist who has not enjoyed the extensive cooperation and hospitality of the HVO staff, a tradition established by Jaggar in his statement of purposes.

The current Director of the U.S. Geological Survey, Dr. Dallas L. Peck, can indeed be proud of the extraordinary accomplishments of his colleagues in the scientific content of these volumes. The authors freely expressed their views, some of which represent opposing opinions, and it is evident that the basic research component of the U.S.G.S. continues to be strong in spite of the financial constraints.

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MINERALS OF MEXICO. William D. Panczner, 1967. Van Nostrand Reinhold Company, Inc. 459 pp, 8 color plates; hard cover. \$48.00.

This book is subdivided into four major sections: (1) Important Mining Districts - a narrative in which the history, geology, and physical characteristics of seven mining districts are developed, (2) Discovery and Developments in Mexico - a chronology wherein events of significance relating to mining, ore treatment, and certain other distantly connected occurrences are briefly described, (3) Bibliography, and (4) Catalog - descriptions of the minerals, arranged alphabetically, that have been found in Mexico. In attempting to assess the portion that the readers of this journal are most likely to use, my comments will pertain primarily to the first section and the bibliography.

The parts of the 49-page narrative in which the histories are given read like a novel and one begins to feel that the author is indeed knowledgeable about what is being reported. One becomes uneasy, however, that there are no reference citations. Where do these facts come from? Where does one go to learn more about a particular event? The 16-page bibliography, which follows, is of

little help for there is no way to connect the hundreds of references contained in it with the text. To make matters worse the bibliography also includes the references for the Catalog, which follows. It would have been much better if the author had separated the bibliography into three groups: history, mining/geology, and descriptive mineralogy. Then, at least, the historical references could be readily identified as such. But the worst is yet to come. The reviewer conducted a spot check on the references and found errors in the titles or the reference numbers (year, journal numbers, page numbers, etc.), with one or more errors in approximately half of the references examined. When such an error rate is observed, it is impossible to feel confident about the integrity of the text, which cannot be readily evaluated because there are no reference citations. If such carelessness is so prevalent in the references, then how can one avoid suspecting similar carelessness in the text? The reviewer is forced to conclude, on the basis of these observations, that this is not a scholarly study. For this reason the reviewer is reluctant to recommend the book as a primary information resource.

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THE VOLCANO LETTER. Edited by R. Fiske, T. Simkin, and E. Nielsen, 1987. Smithsonian Institution. Hardbound. \$30.00 (mailing included).

This book is a complete collection of a (previously) hard-to-find publication, THE VOLCANO LETTER, which was published by the Hawaiian Volcano Observatory from 1925 through 1955. The editors at the Smithsonian have brought all of the 530 issues (1536 pages) together into one rather hefty (3 kilograms) cloth-bound volume.

The LETTER makes for interesting reading, and will appeal to a much wider audience than is implied by the title. The LETTER is certainly of use to volcanologists interested in the detailed accounts of the eruption of the Hawaiian volcanoes throughout the above-mentioned period. However, due to the enthusiasm and eclectic interests of Thomas Jagger, the director of the observatory for the first 28 years of the publication of THE VOLCANO LETTER, the newsletter grew to include: reports on world-wide volcanism, reports on earthquakes and tsunamis, volcanic hazards and techniques of volcano monitoring, articles on geothermal energy, and short vignettes on many other topics. The presence of these vignettes is what makes THE VOLCANO LETTER interesting reading for a very broad geological audience. Articles I turned to at random (and their respective volume numbers) include "The retention of heat in lava flows", #81; The theories of volcanism by Day, Daly and Hubbs, and Bowen, #58-61; "The volcanic History of Oregon", #87; "The underside of the Earth's crust", #120; "silent zones around explosions", #149; "Sunspots and volcanic activity", #172; Continental Drift

(entry by R. M. Wilson; The year was 1928!), #185; "Ocean salts from volcanoes", #232; "The human footprints in Kilauea's ash bed", #273; and "The Shoshone ice cave, Idaho", #313. Clearly, Dr. Jagger saw the LETTER as more than simple record keeping. This publication contains information of interest to volcanologists, to instructors of introductory geology, to geophysicists, to geomorphologists, and to historians of geology. However, this list is by no means exclusive, and the above list of topics shows that the book would interest most earth scientists.

The editors have presented the LETTER in an easy-to-read format, and have produced a comprehensive index of all 530 issues. In addition, they have included a short but informative introduction which chronicles the history of THE VOLCANO LETTER. This background is useful to the reader in providing a basis from which one can appreciate the documents, their authors, and the evolution of THE VOLCANO LETTER through time. The book is a great deal, and can be obtained by sending a check payable to SMITHSONIAN INSTITUTION to E. Nielsen, NHB Mail Stop 119, Smithsonian Institution, Washington D.C. 20560 USA.

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RECHERCHES ET REFLEXIONS SUR LA NAISSANCE DE LA CARTOGRAPHIE GEOLOGIQUE, EN EUROPE ET PLUS PARTICULIEREMENT EN FRANCE. François Ellenberger, 1985. Extrait de *Histoire et Nature*, 22/23, 1983, pp. 3-54, ill. cover, 8 figs, Abstract in French and English, Paris.

François Ellenberger is a past president of the Geological Society of France and of the French National Committee for the History of Geology. He has with his students spent many years in the field, working on a task, the *Carte Géologique de France*, the origin of which is traced in these pages. To have taken the field under his guidance is a rare privilege, combining as it does an introduction to the geology of France and the civilization of Europe, - an experience revived and refreshed in the mind with this happy opportunity for renewed acquaintance.

This monograph presents as detailed an inventory as possible of all maps of a geological character made in France before 1820, whether realized or only proposed, together with a discussion of their relations to continental and British work of the same period. Ellenberger divides these maps into the earliest, those called 'mineralogical' with points identified by symbols for known occurrences of minerals and rocks, such as Guettard's map of 1746; second, those of a primarily physiographic and geomorphic character such as Desmarest's maps of the volcanic regions of Auvergne and Velay; and third, the *geognostic* maps culminating in 1810 with the beautiful *Carte Géognostique des Environs de Paris* of Cuvier and Brongniart. It is Ellenberger's thesis, admirably

supported by his exceptional command of a great body of primary source materials, that the classical geologic map developed from the twin currents of geognosy and neptunism. Geognosy, which he traces to G. C. Fuchsel, is in the words of Delametherie the siting or distribution, gissement of the 'minerals' (in the broad 18th century sense) and their mutual relationships. Neptunism, with extensive Germano-Swedish roots traced in detail, he sees as transforming the map to a history, as well as a kind of lithological geometry. But my oversimplified resume cannot do justice to the breadth of Ellenberger's study or the depth of his perceptions rooted in a broad European tradition of humanism and a lifetime at the forefront of the geological science whose history he is interpreting.

The geologic map is uniquely joined to the science of geology - a spatial as well as an historical science - "...a highly elaborated instrument of thought, reflecting the concepts as well as the knowledge of the moment...its purpose not to inform us above all, but to orient us towards the vast capital of work variously specialized, on which it rests, underlying the schematic and highly simplified cartographic image (p. 4, reviewer's transl.)." And again on p. 50, "...the geologic map on any scale is above all the projection on paper of a mental vision, of an image both analytic and synthetic, elaborated by the mind taking off from the points of anchorage which are the exposures in the field".

History of Science in the best sense, this monograph is a paradigm of what can be achieved by the professional geologist who has at the same time mastered the traditions and methodology of historical scholarship. It should be read by every serious student of geology/history.

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CONTROVERSY IN VICTORIAN GEOLOGY; THE CAMBRIAN-SILURIAN DISPUTE. James A. Secord, 1986. Princeton University Press; pp.363 (incls. index) + xvii \$49.50

Controversy in Victorian Geology will establish James Secord as heir apparent to the intellectual empire constructed by Martin Rudwick in The Great Devonian Controversy. Conveniently, the dispute over the proper boundary between the Cambrian and Silurian strata, as well, chronologically succeeds the controversy over the Devonian rocks. As Secord points out, the resolution of the Devonian controversy fuelled the flames of the Cambrian/Silurian dispute and helped to force the principal actors, Roderick Murchison and Adam Sedgwick, into even more diametrically opposed positions.

Like Rudwick before him, Secord forsakes the recounting of heroic debates about the age of the earth - Vulcanism, Neptunism, and uniformitarianism alike - to examine microscopically what is much more typical of

the Victorian geological enterprise, the concern with establishing a proper taxonomy of geological strata. This was the geologists' "normal science"; the same obsession with classification which pervaded the other natural history sciences likewise strongly influenced the everyday practice of geology. Stratigraphy was so much of a piece with geology during the first half of the nineteenth century that the word itself was not coined until the second half, and then, Secord explains, in order to denote a specialized enterprise distinct from other emerging geological specialities.

Theorists like Darwin and Lyell were few and far between. Classifiers like Sedgwick and Murchison, who forged institutional fiefdoms that reflected their intellectual predilections, ruled the day. Secord posits that Cambridge gave Sedgwick his "'geometrical' and structural approach," while London and Oxford connections led Murchison to interrogate the strata using paleontological methods. At Cambridge and the Geological Survey in London, both men trained up legions of camp-followers who echoed their battle cries throughout the British Isles and even into Britain's overseas colonies.

The dispute over the proper boundary between the Cambrian and Silurian formations assumed remarkably acrimonious proportions. Yet, as Secord explains and illustrates, due to the gentlemanly avoidance of controversy in published accounts, the dimensions of the debate need to be reconstructed from manuscript sources. Secord carries out this reconstruction with consummate skill; nor does he fail to synthesize all he can from secondary sources in addition. His ability to glean much from arid materials permits him to introduce valuable discussion of even those points tangential to his main purpose. Thus we learn a lot from Controversy in Victorian Geology about how the Geological Society refereed its publications, about how the Geological Survey became "the most exciting center for theoretical and descriptive natural history research in the British Isles" and about "styles" and "systems" in geology, just to give several examples.

Is the Cambrian/Silurian dispute merely a tempest in a teapot? Secord effectively parries this suspicion by demonstrating that the controversy carried a host of significant ramifications. As he states, Cambria and Siluria assumed a longstanding symbolic value for Victorian geologists, as "manifestations not only of different ways of seeing the rocks, but also of different ways of perceiving and obtaining scientific knowledge." The controversy, furthermore, acted as an important impetus to scientific discovery by geologists other than Sedgwick and Murchison, especially in Joachim Barrande's work on the primordial fauna below the Lower Silurian. He also shows how the two geological doyens consolidated their positions by complicated manoeuvres within the networks of power and patronage that both commanded.

Second, then, is saying profound things about the intellectual texture and social fabric of Victorian geology. His work also possesses considerable value for historians, philosophers, and sociologists concerned about scientific processes in other historical contexts. He tackles, for example, the thorny issue of scientific nomenclature, and eloquently suggests that classifications should be recognized "not as unmediated accounts of observation, but as specific choices of language from a variety of potential alternatives." He is explicitly concerned to establish the role of controversy as a scientific stimulant, not as an indicator of scientific pathology. Readers of *Controversy in Victorian Geology* will conclude with Secord that "Nothing looks more straightforward than a geological map, yet nothing could arouse more passionate controversy".

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"DAMNED NONSENSE" -- THE GEOLOGICAL CAREER OF THE THIRD EARL OF ENNISKILLEN. Kenneth W. James, 1985. Ulster Museum Publication no. 259, 1986. 24 pp., 19 illus. in col. or monochrome. (Available by mail from The Shop, Ulster Museum, Botanic Gardens, Belfast BT9 5AB, Northern Ireland, U.K.).

William Willoughby Cole (1807-1886), born Viscount Cole and becoming, on the death of his father in 1840, third Earl of Enniskillen, was an important figure in the geological circles of Queen Victoria's time but has since faded from scientific memory. He was, in his day, one of Britain's two leading palaeoichthyologists, the other being his close friend Sir Philip de Malpas Grey Egerton of Cheshire. His home, Florence Court in County Fermanagh, northern Ireland--in those days, that first word was still spelled with a small "n"--was virtually a place of pilgrimage for European palaeontologists, so fine was the collection housed there. Moreover, Cole served repeatedly on the Council of the Geological Societies of London and Dublin and, when the latter grew into the Royal Geological Society of Ireland, he was its first President.

Cole was aroused to an interest in geology whilst at Oxford, by the inspired teaching of William Buckland. It was there that he and Egerton formed their lifelong friendship; and it was a meeting with Louis Agassiz, during a sort of geological Grand Tour of Europe made by the two young men with Buckland, that turned their particular attention to fossil fishes.

Lord Cole's developing geological interest aroused initial hostility from his father the Earl, who described it as "Damned nonsense!" This was adroitly overcome by Cole when he invited a group of distinguished geologists to Florence Court in 1835, following a meeting of the British Association in Dublin: Sedgwick, Murchison, John Phillips, Agassiz and Sir Richard Griffith were in that party. The old Earl

was so impressed, and found the "hammer-bearers" such congenial company, that he placed no further obstacles in his son's scientific path.

In the course of time, the collection grew to include a staggering 10,000 specimens of fossil fishes, in addition to lesser numbers of other vertebrates and invertebrates. In addition, Cole--by then become Earl--developed in later years an interest in archaeology and was an early investigator of Irish crannogs (lake dwellings). When, in his sixties, he became blind, he ensured the survival of his collection by donating it to the British Museum (Natural History).

This attractive booklet deservedly rescues from oblivion one of the towering - he stood 6 ft. 6 in. tall! - figures of nineteenth century geology. His importance came not through his publications - he published little - but through his support of our young discipline, at a time when the sympathetic concern of the aristocracy and clergy was vitally necessary in its struggle for public acceptance, and through the fact that his collection was made freely available to researchers world-wide, both during his lifetime and posthumously.

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HISTORICAL WRITING ON AMERICAN SCIENCE. Sally Gregory Kohlstedt and Margaret W. Rossiter, eds. 1986. The Johns Hopkins University Press, Baltimore and London. 321 pp., paper cover. \$15.00

Geologists and historians alike will find intriguing ideas in this book. Of particular interest is Mott T. Green's essay on the History of Geology, but a comparison with history of other sciences is also rewarding. The editors provide an excellent and provocative summary of the book in their introductory chapter. By comparison with other fields, the history of geology is relatively young; we seem to be far from a stage of synthesis.

Almost any area in geology is still fair game for the historian. As Green emphasizes, most of the historical papers to date have been written by geologists. This seems only natural to me, as most historians have been too occupied with the more "important" persons, ideas and developments in other disciplines to bother themselves with such a historically disorganized science as geology.

However, I am irritated by Greene's statements that historical writing by geologists is amateurish--that there is too little "professional history... written by historians for historians." The concept of a "true" history waiting to be uncovered by critical scholarship seems the height of elitism; this may explain why few historians bother with geology as a suitable subject for their scholarly efforts.

Geologists certainly are amateur historians; but, for the most part, the finer aspects of amateurism are reflected in their historical writing. Most geologists who write about history do so as a labor-of-love, because they are trying to place some person, event or concept in historical context. In most instances, this work is in the geologist's special subdiscipline.

It seems to me that the history of any science revolves around the people who do the scientific research. There are no ideas in science other than those developed by inquiring minds seeking to explain what they see around them. Thus, historical biography, in the broadest sense, is the only true history of geology. The gestalt approach to history, trying to place the development of scientific concepts in a social or cultural context, is actually only an historian's idea of historical relationships. It is no more the "true" history of events than is anecdotal biography, official institutional history, or what Greene calls "attack and defense" confrontation between scientists. The lives of geologists, growth and decline of institutions, and the confrontations themselves are, to me, the real history of geology.

All geologists interested in the history of their science should peruse this book and reflect upon how they and the professional historians of science are attempting to decipher the course of past events.

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A HISTORY OF THE GEOLOGICAL SURVEY OF
WYOMING. William Bryans, 1986. The
Geological Survey of Wyoming, Laramie,
Wyoming, 125 p. Paper cover, \$6.00.

The history of the Geological Survey of Wyoming is inseparable from the history of the development of the State's mineral resources. That is the theme of this comprehensive history. Bryans is an historian, not a geologist, but he places the Geological Survey within the general history of Wyoming, with full appreciation of the State's complex geology and its mineral development.

Although the Survey officially began in 1933, it was preceded by the Territorial Assayer/Geologist in 1878, and the State Geologist's Office in 1890. However, the primary mission since 1878 has been to collect, compile, and disseminate reliable information on Wyoming's geology and mineral resources. The terms of the pre-Survey State Geologists were only for one to seven years, and early on they had a dual role of practical scientist and promoter of the mining industry. Samuel Aughey's pioneering reports (1886) were mainly on petroleum potential and fossils. Wilbur Knight (1897-1901) was the first State Geologist, although de facto without pay. Henry Beeler (1901-1908) followed, with emphasis on coal, mineral statistics and mine safety. Loyal

Trumbull, Glenn Morgan, Albert Bartlett and John Marzel were heavily involved in Wyoming's oil booms and regulation of the oil industry, curtailed by the dark days of 1932.

The Geological Survey was created in 1933, transferring regulatory activities from the State Geologist and combining the position of State Geologist with the chairmanship of the University of Wyoming's Geology Department. This thus removed it from politics. As a result, only five geologists have served as Director in the Survey's fifty-four years, allowing stability and progress. Samuel Knight (1933-1941) was the first; he oversaw much work in groundwater resources, related to the 1930s drought, and encouraged thesis studies by geology students. A thesis by John David Love started him on his illustrious geologic career. Horace D. "Bill" Thomas followed (1941-1967) and with World War II and the post-war boom in minerals, the Survey made significant contributions. These included establishment of a core and oil well sample repository, work on the Oil & Gas Conservation Commission and geologic reports that led to the U. S. Steel Atlantic City taconite iron-ore mine near South Pass.

When Bill Thomas died, Donald Blackstone (1967-1969), was appointed State Geologist. He oversaw completion of significant reports on Precambrian rocks and the Absaroka Mountains. In 1969, the Survey was reorganized, separated from the University of Wyoming Geology Department and set up as an individual state agency but on the campus, with an Advisory Board to help guide the programs. Daniel N. Miller, Jr. (1969-1981) became the State Geologist and presided over a dynamic decade that saw explosive growth in petroleum, low-sulphur coal and uranium. The staff tripled, and was managed in five sections; oil and gas, minerals, coal, environmental geology, and stratigraphy. With expansion of work loads, new quarters were provided in 1976 by a 22,400-square-foot Geological Survey of Wyoming Building. When Dan Miller went to Washington, D.C. to serve as Assistant Secretary for Energy and Minerals in the Department of Interior, Gary Glass was appointed State Geologist, and he has continued the comprehensive geologic work in energy resources and environmental geology.

Author Bryans' presentation, the result of extensive research, is concise, factual and interesting, giving the human side to the scientific record compiled by the Geological Survey of Wyoming.

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CONCISE MARINE ALMANAC. Gerard J. Mangone,
1986. Van Nostrand Reinhold, New York. 135
p, hardbound. \$27.95.

This book contains a wealth of miscellaneous information relating to the oceans, ranging from the major components of seawater to the number of fishermen in

nineteen countries of the world. Much of the data undoubtedly were dated by the time of publication, especially those dealing with size of naval forces.

Assembling of all of this information from so many sources was a monumental task. Its assemblage should provide a useful reference for anyone in need of access to a compendium of general information on the oceans. Unfortunately, the book does not quite meet this goal in my estimation, primarily because of too many errors, either typographical or just plain mistakes, or because some of the sections are rather brief and shallow and could well have been left out.

A rod is defined as 6.029 m, but two other references list it as 5.029 m. A barrel contains 31.1 gallons of water according to this reference, but other references have it listed as 31.5 gallons. I cannot believe that the discharge of the Zaire (Congo) River is 13x the Amazon; that of the Columbia River 2.3x that of the Congo; and the Columbia 22.8x that of the Mississippi. A list of 21 major trenches and deeps of the world includes two names not recognized by the U.S. Board of Geographic Names nor by the International Hydrographic Bureau. Also included is the Ionian Basin instead of the Hellenic Trench, the only trench in the Mediterranean. In a tabulation of offshore natural gas production of the world, figures for the countries are given for 1981 and 1982 but the summation is listed for 1983 and 1984.

These errors suggest that others lurk in the myriad of statistical summaries given and leave some doubt about the validity of using this as a reference book.

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HISTORY OF EARTH SCIENCES SOCIETY

Report of the Secretary

The society was weakened by the death late in 1985 of Fritiof M. Fryxell. During 1986, the society lost three other members; Joan Eyles, John W. Harrington, and H. W. Menard. We are all saddened by this loss.

On the positive side, the society records 435 members, as of the end of 1986. Because of the nature of the geologic community of the world and where the History of Earth Sciences Society began, the membership is still predominantly from the United States. However, more than a quarter of our members are from 19 other countries. 135 institutional subscribers are on our rolls; almost one-third of them are from 23 countries, exclusive of the United States.

Collectively, we can all be proud that our society is truly international in scope and of its steady growth. As stated previously "so far so good". Nevertheless, our financial margin is still incredibly thin

and it is only through the kindness of the Northeastern Science Foundation that we are able to put out as large a journal as we do. Members are most emphatically encouraged to invite their colleagues to join the society and to make certain that their institution subscribes.

After five years, I am now no longer secretary of the History of Earth Sciences Society. It has been a busy time, but one that has been rewarding. Our society has gone from a vague idea to a definite place within the history of science. Articles from our journal are already being cited in books. I thank all the members for their support and their encouragement during these years. In the same vein, I am confident that with Kennard Bork as Secretary the Society will be in remarkably good hands and will continue to grow.

Ellis L. Yochelson, (former) Secretary

Report of the Treasurer for 1986

The History of Earth Sciences Society's total cash on hand increased, during the period 31 December 1985 to 31 December 1986, from \$4,626.66 to \$6,232.23. This is reassuring, since things were moving in the opposite direction in 1985.

I encourage Society members to recommend that their institutional libraries subscribe to Earth Sciences History, and to interest their friends and colleagues in HESS membership.

My thanks to Ellis Yochelson for being willing to handle the Treasurer's chores during the 1987-88 academic year while I take a leave of absence.

The following persons deserve thanks for their generous contributions to the Society in 1986:

1986 Contributors to HESS

Claude C. Albritton, Jr., Michele Aldrich, Daniel D. Arden, John Blunt, Kennard B. Bork, Aart Brouwer, Gilbert Corwin, William C. Darrah, David E. Eby, John S. Ferguson, Jr., Sir Charles Fleming, Henry Frankel, Clifford Frondel, J. G. C. M. Fuller, David H. Geiser, Robert N. Ginsburg, William Glen, W. Dean Grafton, Hollis D. Hedberg, Gunnar Henningsmoen, H. Stanton Hill, Jennifer Hines, F. D. Holland, Alan Stanley Horowitz, Isao Imai, William M. Jordan, Arthur F. Krueger, Walter Kupsch, John F. Lance, Rachel Laudan, Joel J. Lloyd, Thomas G. Manning, Kathleen Mark, Ursula B. Marvin, Alan P. Mason, Gary Melickian, Anne Millbrooke, Haydn H. Murray, Barbara L. Narendra, Sally Newcomb, Thomas R. Osberg, William D. Rice, Mary Savina, Charles K. Scharnberger, Susan Schultz, Robert R. Shrock, Marie Siegrist, Brian J. Skinner, R. C. Sprigg, Richard G. Stearns, Myron T. Sturgeon, A. G. Unklesbay, Malcolm P. Weiss, Karin L. Willoughby, Stephen S. Winters

Respectfully submitted,
Kenneth L. Taylor

JOAN MARY EYLES, née BIGGS (1907-1986)

Joan Eyles, a founder member of the History of Earth Sciences Society, was born on 15th June 1907 in Glamorgan, and grew up in Bridgend. She was educated privately at St. Winifride's convent in Swansea. In July 1924 she passed the London Matriculation Examination and entered University College, Cardiff, where she studied science. She graduated B.Sc. with first class honours from here in 1928 and achieved a double first with her external B.Sc. in geology from London University in the next year.

She then turned to research in geology and entered King's College, London, in 1930 to research volcanic rocks in the Southern Uplands. For this she was awarded the Dixon Fund in 1931 and she joined the Geological Society in the same year. A more momentous event in that year was her meeting with Victor Ambrose Eyles (1895-1978) whom she married after a whirlwind romance in October. Her Ph.D. work suffered more and more from her new life with this peripatetic field geologist on H.M. Geological Survey of Great Britain, then based in Newcastle-on-Tyne, and it had to be abandoned.

The director of the Survey took pity on the couple and moved Victor and Joan to London to prepare exhibits for the new Geological Museum. Life in the midst of the capital introduced them to the world of second-hand book shops and their weekends were spent exploring them and laying the foundation of the magnificent Eyles library of early literature on the History of Geology, now housed as a special collection at Victor Eyles' alma mater, Bristol University.

An early acquisition (for 4/- in a shop in Hammersmith in 1933) was the copy (no. b 55) of William Smith's Geological Map of 1815, which had belonged to William H. Wollaston (1766-1828), who had founded the Wollaston Medal of which the first had been awarded to Smith. This intriguing association spurred the Eyles' to examine other copies of the map and to the discovery that there was a complex publication history to it, which they researched and published in 1938 [1].

The book collection grew as Victor's work took him to Edinburgh (1935-1940), although this was then interrupted by Victor's war work on assessing bauxite deposits in Northern Ireland [2]. After the war, from their London base, their interest in the history of geology was rejuvenated, and Joan's particular contribution was a series of centenary notices of geologists, contributed to Nature from 1951 to 1961.

By 1945 Victor had become a District Geologist on the Survey but, finding administration less to his liking than field work or book collecting, they decided he would retire at his reaching sixty. They moved first to the old rectory at Milton-under-Wynwood

near Oxford, and then in 1962 to Great Rissington in the heart of the Cotswolds nearer Cheltenham. Proximity to Oxford had re-introduced Joan to the world of William Smith, whose manuscript had been discovered in an Oxford University museum attic just before the war. Joan started meticulous and very devoted research on the collection and on all aspects of William Smith's life for a planned biography. While this never, sadly, appeared, she made at least eleven significant published contributions to Smith scholarship between 1967 and 1985. Other contributions included at least eleven entries in the prestigious Dictionary of Scientific Biography over 1971-1978.

In March 1978 Victor Eyles died after a short illness during which Joan was his devoted nurse. She then faced the choice of staying in her Cotswold cottage or moving to somewhere nearer Oxford. But her commitments, whether as the senior British scholar in the field of the history of geology, as a lecturer on Smith, as a source of information to an ever increasing circle of strangers who sought her expertise, as advisor to the Geological Society Library or as a devoted conference goer, never really allowed her to face the choice.

In later years visitors to her cottage were always assured of a warm welcome, but they noticed, too, that she was becoming increasingly side-tracked from her work on Smith by the sheer volume of her other interests & activities. She was an enthusiastic supporter of the History of the Earth Sciences Society, founded in 1981, and of the Society for the History of Natural History, whose Founder's Medal she was delighted to receive in March 1986 [3]. She applied, without success, for a D.Sc. degree from her old University College in 1984. She died on 14th June 1986 after a stroke, and was cremated at Cheltenham.

Her (and Victor's) best general memorial will remain the magnificent Eyles Library at Bristol. This is a major collection started before it became a financial liability by two who became very able "book hounds". In later years, when the library had become expensive to maintain and augment, it was still possible to support it from Joan's surprisingly capable business acumen on the Stock Exchange. For those of us privileged to have had her friendship, that, and her devoted help with our problems, will remain our memorial.

Notes

[1] Annals of Science, 3, 190-212, 1938. A full list of Joan's nearly 50 publications will appear in a future appreciation in Archives of Natural History.

[2] Victor's work both as a geologist and historian is well covered by John Thackray in V.A. Eyles (1895-1978), an Obituary and Bibliography, Journal of the Society for the Bibliography of Natural History, 9, 1-9, 1978.

[3] Archives of Natural History, 13, 212 shows a photograph of the occasion.

INTERESTING PUBLICATIONS

Since the start of this journal, Editor Gerald M. Friedman has prepared this column. Contributors wishing to list recent books and papers of interest to our membership are requested to send them to the Editor.

Anonymous, 1986, A dream dies in Texas: People, v. 26, No. 19, p. 47-51.

Anonymous, 1986, Royal Society of Edinburgh commemorates James Hutton: Earth Science, v. 39, No. 4, p. 8.

Anonymous, 1987, Spindletop: American Heritage of Invention and Technology, Summer 1987, p. 34-43.

Allwardt, Alan, and Bowin, Carl, 1987, Hess, Menard, and Wegener: Thoughts on thoughts in the plate-tectonics revolution: Geology, v. 15, p. 475-476.

Atack, Jeremy, and Bateman, Fred, 1987, To their own soil: agriculture in the Antebellum North. (Henry A. Wallace Series on Agricultural History and Rural Studies): Ames, Iowa, Iowa State University Press, 322 p., \$29.95.

Barnes, John, 1986, Frederick Augustus Genth - Quintessential scientist: Pennsylvania Geology, v. 17, p. 7-13.

Bork, K.B., 1987, History of geology: Geotimes, v. 32, No. 2, p. 29-31.

Breithaupt, B.J., 1986, The geological Museum at the University of Wyoming: Fossils Quarterly, v.5, p. 8-19.

Burkhardt, Frederick and Smith, Sydney, eds., Browne, Janet, Kohn, David, and Montgomery, William, associate editors, 1986, The correspondence of Charles Darwin, vol. 2, 1837-1843. Cambridge University Press, 603 p. \$37.50.

Coope, J.A., 1987, Logan Day - 1986. Who is this Logan guy anyway. Sir William Edmond Logan: Geology, v. 16, p. 20-21.

Dodge, C.H., 1987, The Second Geological survey of Pennsylvania: The golden years: Pennsylvania Geology v. 18, p. 9-15.

Donovan, R.N., 1987, Georoots: origins of the geological profession: West Texas Geol. Soc., v. 26, no. 8, p. 18.

Doria, S.S., and Doria, J.J., 1986, Out of the Past - Sir William Logan founded Canada's Geological Survey. He was an explorer, storyteller, and eccentric workaholic: Earth Science, v. 39, No. 4, p. 29.

Drake, E.T., and Jordan, William, eds., 1985, Geologists and ideas: a history of North American geology. (Centennial Special Volume 1): Boulder, Colorado, The Geological Soc. of America, 525 p. \$37.50.

Fail, R.T., 1987, The Fourth Geological Survey of Pennsylvania: The resource years: Pennsylvania Geology, v. 18, p. 23-32.

Feinberg, L. 1987, Yellowstone National Park - The Oberlin connection: Oberlin College Library commemorating the 100th anniversary of the death of F.V. Hayden, 8 p.

Fisher, D.E., 1987, The birth of the earth: A wanderlied through space, time, and the human imagination: New York, Columbia University Press, 270 p., \$24.95.

Forster, C.A. and Spamer, E.E., 1986, A paleontological pilgrimage through Philadelphia, the birthplace of American paleontology: The Mosasaur - the Journal of the Delaware Valley Paleontological Society, v. III, p. 181-193.

Friedman, G.M., 1987, Tribute to my students and coscientists: The Rensselaer Sedimentology Program 1964-1984. Address of the Retiring President of Sigma Gamma Epsilon: The Compass of Sigma Gamma Epsilon, v. 64 no. 2, p. 60-81.

Gabriel, Miroslav, and Pouba, Zdenek, 1986, Geologist honored for studies of ore genesis: Geotimes, v. 31, No. 10, p. 19-20.

Goetzmann, W.H., 1986, New lands, new men. America and the second Great age of discovery. Viking, New York. 528. p. \$24.95.

Green, C.F., ed., 1986, 62 years' history of the Pacific section of the American Association of Petroleum Geologists, 1924-1985: Miscellaneous publication, Pacific Section AAPG, 155 p.

Hewitt, Roger A., 1987, Paleontological work of Lt. Col. C.G. Grant on the Silurian rocks of the Niagara Escarpment at Hamilton, Ontario: Geoscience Canada Vol. 13, 270-276.

Hoskins, D.M., 1987, The First Geological survey of Pennsylvania: the discovery years. Pennsylvania Geology, v. 18, p. 1-8.

Hoskins, D.M., 1987, James C. Booth and the early connections of the Delaware and Pennsylvania geological surveys: Univ. of Delaware, Dept. of Geology Seminar series DGS Sesquicentennial Lecture.

Hoskins, D.M., 1987, William Darby's forgotten geology: Geol. Soc. America, Abstract with Programs, v. 19, No. 1, p. 20.

Hstl, K.J., 1986, Darwin's three mistakes: Geology, v. 14, p. 532-534.

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Johnson, M. E., 1987, North American Paleozoic oceanography: Overview of Progress toward a modern Synthesis: Paleocceanography, vol. 2, no. 2, p. 123-140.

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- Mehnert, K.R., 1987, 50 Jahre Granitforschung (50 years of research on granite): *Geologische Rundschau*, v. 76, p. 1-14.
- Messeri, P.A., 1986, Social position and theory choice: the case of continental drift: *Diss. Abstr. Int.*, v. 46, p. 2447A.
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- Ostrom, J.H., 1987, Romancing the dinosaurs: *The Scientist*, N.Y. Academy of Sciences, April 1987, p. 56-63.
- Pees, S.T., 1987, Antebellum iron ore mining along the fringe of the coal measures in northwest Pennsylvania: *Geol. Soc. America, Abstracts with Programs*, v. 19, No. 1, p. 51.
- Pyenson, Lewis, 1987, The limits of scientific condominium: Geophysics in Western Samoa, 1914-1940. *Scientific Colonialism: A Cross-Cultural Comparison*, Reingold, N., and Rothenberg, M., eds., Washington, Smithsonian Institution Press, p. 251-295.
- Pyne, S.J., 1986, *The ice: a journey to Antarctica*: Univ. of Iowa Press, \$37.50.
- Roberts, Rex, 1986, *Dinosaurs are forever*: Columbia, October, 1986, p. 20-27.
- Ryder, R.C., 1986, Hawkins' hadrosaurs: The stereographic record: the Mosasaur: *The Journal of the Delaware Valley Paleontological Society*, v. III, p. 169-180.
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- Scott, H.W., 1986, *The Sugar Creek Saga, Chronicles of a Petroleum Geologist*. Ann Arbor Michigan, Cushing Malloy Inc. 1350 North Main Street. Order from Dept. of Geology, University of Illinois, 245NHB, 1301 West Green Street, Urbana Illinois 61801. Send \$20 check to Univ. of Illinois Foundation, H.W. Scott Fellowship Fund. 308 p.
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- The Volcano Letter, published by the Hawaiian Volcano Observatory from 1925 to 1955. Reprinted by the Smithsonian Institution. \$30.
- Walmsley, P.J., 1987, The British Geological Survey contribution to the exploration of the continental shelf: *Journal of the Geol. Society*, v. 144, p. 207-212.

1988

Sept. 19-23 - Intl Symposium on "Engineering Geology as related to the Study, Preservation and Protection of Ancient Works, Monuments and Historical Sites" sponsored by the Greek Committee of Engineering Geologists of the International Association of Engineering Geology (IAEG), Athens, Greece. mtg., field trip and post-symposium excursions to historical sites and archaeological monuments with Engineering Geology interest through continental Greece, Crete and the islands (Peloponnese, Knossos, Athos, etc.) Official languages of the Symposium - English, French & Greek. Contact: Greek Committee of Engineering Geology, 1988 Symposium Secretariat, P.O. Box 19140, GR-117 10 Athens, GREECE. Telex: 45 4312 POLX (c/o Prof. Paul G. Marinou).

Sept. 23-25 - History of Geomorphology Conference, Canada. Contact: Dr. K. J. Tinkler, Brock University, St. Catharines, Ontario, Canada L2S 3A1. Telephone (416)688-5550.

Oct. 31-Nov. 3 - History of Geology Division symposium on "History of the Establishment of a Geologic Framework for Human Evolution," Denver, Colorado. Contact: Dr. Leo F. Laporte, Earth Sciences, Applied Sciences Building, University of California, Santa Cruz, CA 95064.

1989

March 28-April 9 - "The Murchison Symposium: An International Symposium on the Silurian System," sponsored by the Subcommittee on Silurian Stratigraphy, The Palaeontological Association, The Geological Society of London. University of Keele, U.K. Convenors: Dr. M. G. Bassett, Department of Geology, National Museum of Wales, Cardiff CF1 3NP, U.K. Telephone: (0222) 397951 and Dr. P.D. Lane.

July 9-19 - 28th International Geological Congress, Washington, D.C. USA. Contact: Dr. Bruce B. Hanshaw, Secretary General, 28th International Geological Congress, P.O. Box 1001, Herndon, VA 22070-1001 USA. Telephone 703648-6053. Telex: 248418

Aug. 1-9 - XVIIIth International Congress of the History of Science to be held in Hamburg and Munich, Federal Republic of Germany. General theme: "Science and Political Order (Wissenschaft und Staat)" intended to comprise all facets of the relations between science (technology and medicine) and the numerous forms of political order. Symposia, Scientific Sections and Poster Sessions. Chairman, National Program Committee: Prof. Fritz Krafft (Fachbereich Mathematik, Staudinger Weg 9, D-6500 Mainz, F.R. of Germany. Chairman, Organizing Committee: Prof. Christoph J. Scriba, Institut für Geschichte der Naturwissenschaften, Bundesstr. 55, D-2000 Hamburg 13, F.R. of Germany.

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APPEAL FOR INFORMATION

Planned biography of Mary Anning (1799-1847), fossil dealer of Lyme Regis, Dorset, England

When, towards the end of Mary Anning's short life, the King of Saxony visited the Dorset town of Lyme Regis, he called into her celebrated shop where she sold the fossils of the neighbouring coastline. She was able to tell him correctly that she was "well known throughout the whole of Europe".

Despite such celebrity she has never been properly treated biographically, and for this Hugh Torrens (Centre for the History of Science and Technology, Keele University, ST5 5BG, England) seeks any information about her. In particular he hopes to locate further primary sources: letters to or from her (already 35 of her letters have been traced), references to her in contemporary letters or diaries, and to specimens supplied by her. Assistance will be gratefully acknowledged.

MISCELLANEA

One aim of this column is to provide an informal forum for informal comments. The quality of what is written is partly a reflection of what is sent in by members. Please will someone write in.

This year in the United States of America there has been considerable celebration about the bicentennial of the Constitution. Thus, it is particularly appropriate that in "The first state," the Delaware Geological Survey celebrated its sesquicentennial. A prime event was a lecture "James C. Booth and the early connections of the Delaware and Pennsylvania Geological Surveys", given by D. M. Hoskins, State Geologist of Pennsylvania. The legislature also passed a resolution of praise to the organization.

If you move, please send in a change of address!! When the post office returns a journal, the society must pay additional postage. Then we pay again to mail it out. A returned copy costs about \$2.20; a stamp for change of address, 22 cents.

The two basic tools of the field geologist are hammer and hand lens. There is

a rumor that some years ago, a talk was given at an international meeting on hammers, but no one has details. Does anyone reading this know of such a talk? Does anyone know of a study of hand lenses or have any information on common laboratory magnification during the latter part of the last century?

"Interesting publications" is limited to works in history. Two items of use which are more in the nature of current events are the Yearbook of Instituto Geologico y Minero de Espana and the book and map catalogue of Sverges Geologiska Undersökningen. Each mentions the history of their respective organization. Apologies to Spain for omitting an accent, but most word processors are limited in this aspect.

It would be nice if most of our membership attended the International Geological Congress in Washington, D.C. two years hence. A most attractive program in history is in the offing. Those who are not familiar with that city in July should take care. Each morning, the weather forecast indicates that it will be in the 90s. This number refers both to degrees Fahrenheit and to humidity!

Ellis L. Yochelson, E-501, National Museum of Natural History, Washington, DC 20560