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Panoramic view of the Upper Cretaceous sediments in the San Juan Basin of New Mexico, near Ojo Alamo, where the eight sandstone tablets inscribed by Sam Magruder will be found in the 23rd century (see Léo Laporte's article within).

Editorial

Controversies in Geology and Paleontology

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Editor, Earth Science History

This number of *EARTH SCIENCES HISTORY* treats a series of controversies which remind us that there is a good deal more to earth science than the careful observation of nature—we have each other to deal with as well. Ellis Yochelson takes us through a North American controversy on Period/System names in the Paleozoic, concentrating on the influence of Walcott in establishing the term Ordovician over Lower Silurian, and providing us with some useful and wry observations on the process of naming things.

Malcolm Weiss takes us through a different kind of controversy, a matter of intellectual property, priority, and, to put a name to it—scientific fraud. This very interesting episode of 1892 raises a number of worthwhile questions.

Thomas Gold makes a start here on a controversial subject I would hope to see investigated further—the history of theories of the origin of petroleum. Prof.

Gold's well known recent work on the "deep hot biosphere" and chemoautotrophic Archean bacteria has brought this controversy to the fore again. It also reminds us of the value and importance of Russian language historical sources and work, through our (late) colleague Peter Kropotkin's essay, here translated and reprinted, thanks to Professor Gold.

The issue is rounded out by some informative notes by Martina Kölbl-Ebert on Mary Buckland and Charlotte Murchison, and Léo Laporte's musings on G.G. Simpson's novel (that's right, novel!) published last year.

The editor offers his thanks to authors and referees for their dedicated and cooperative work, to our treasurer Dorothy Sack for her excellent stewardship of our finances, and to our colleague at Allen Press, Theresa Pickel (and her co-workers) for some extremely fine work on the last two issues.

LETTER TO THE EDITOR

O. H. Schindewolf (1896–1971): A revised picture of an eminent scientist

O. H. Schindewolf, an hegemonian priest of orthodoxies who viewed disagreement as insubordination and challenge as sacrilege? This view of the late paleontologist of Tübingen University emerged, when the English translation of his book *Grundfragen der Paläontologie* was published together with a foreword by S. Gould and an afterword by W. E. Reif (*Basic Questions in Paleontology. Geologic Time, Organic Evolution, and Biological Systematics*, Chicago and London: University of Chicago Press, 1993). Based on these two comments, W. A. S. Sarjeant in his review of the English version of the book (*EARTH SCIENCES HISTORY*, 1994, 13, 191–192) concluded that Schindewolf was an absolutely dogmatic and intolerant scientist whose behaviour inhibited progress in paleontology.

We, his former colleagues and students, who knew Schindewolf better than those now judging him, fully disagree with this characterization, which seems to describe a personality quite opposite and adverse to that which we experienced.

“An individual can only do his best when allowed to work with keen interest and inner enthusiasm in complete freedom”: with this statement Schindewolf, as acting president of Tübingen University, addressed newly arriving freshman students. He stood for this conviction and acted correspondingly, thus risking his life during the Nazi terror in Germany, as mentioned also by his close friend C. Teichert in 1976 (*J. Paleontol.*, 50: 1–12). In fact, students have seldom been able to enjoy greater personal freedom to follow their own scientific interest and to find and formulate their own conclusions than under his supervision. They were able to develop in a generally open-minded atmosphere of great tolerance. This fact can be demonstrated by the following: Ammonites were Schindewolf’s preferred example in his attempt to interpret phylogenetic histories in terms of distinct phases which he termed “typogenesis”, “typostasis” and “typolysis”. One of his students, however, the late Jost Wiedmann, concluded in 1969 (after exhaustive field collections) that the abnormal shape of the heteromorph Cretaceous ammonites had nothing to do with “typolysis” but could secondarily evolve to bear quite normal coiled skeletons. Schindewolf nevertheless not only accepted Wiedmann’s conclusions but also con-

tinued to accept him as an esteemed colleague and friend.

When the adamant German opponent of Schindewolf’s typostrophism, W. Gross, escaped from East Germany and its communist regime to West Germany, it was Schindewolf who organized a second chair of Paleontology at the Tübingen University and invited Gross to continue his work in his Department of Geology and Paleontology. Whereas Schindewolf adapted Garstang’s slogan “the first bird hatched from a reptile’s egg”, Gross readily responded by stating “the first feather-bearing animal was a reptile”. Another opponent, Ernst Mayer, followed Schindewolf’s invitation to hold a joint seminar in Tübingen in order to discuss evolution theory together with students.

Schindewolf never used “evolutionary height” as a stratigraphic marker as it may appear from a remark in Reif’s afterword. One of the authors of this comment remembers that Schindewolf sarcastically criticised such an attempt of another paleontologist. We do not know of any “superiors” that “censored” young students if they discussed the theory of typostrophism critically. If there were anyone, they certainly would have suffered from Schindewolf’s pungent mockery.

The respect which we held for Schindewolf was nourished by his nobility and integrity, by his broad and profound knowledge, his incomparable treasure of observations and his strong argumentative power. For differing opinions, he expected and had the right to expect stringent arguments.

Schindewolf, whose theories cannot simply be called anti-Darwinian, inhibited the progress of paleontology just as little as the related theory of “punctuated equilibria”. On the contrary, like all productive theories, they stimulated many scientists to new and perhaps more exact observations and to intensive discussions.

We have taken the opportunity of Schindewolf’s 100th birthday to counteract the distorted image of an eminent paleontologist who we feel has earned greatest respect not only as a scientist, but also by means of his personality.

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(Replies to Prof. Jürgen Kullmann, Inst. für Geol. und Paläontol., Eberhard-Karls Universität Tübingen, Sigwartstraße 10 D-72076 Tübingen, Germany)

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1. *EARTH SCIENCES HISTORY* promotes and publishes historical work on all areas of the earth sciences—geology, geography, geophysics, oceanography, paleontology, meteorology and climatology. The journal honors and encourages a variety of approaches to historical study: biography, history of ideas, social history, and histories of institutions, organizations and techniques.

2. Submit **manuscripts** (original and two copies) to the Editor: Mott T. Greene, University of Puget Sound, Tacoma, Washington, 98416, U.S.A. Please include an **abstract** of approximately 150 words. Contributors should retain a copy for reference, and should include return postage or international reply coupons if they desire return of submitted material.

3. Manuscripts should be **typewritten** or processed on a **letter quality** printer and **double-spaced** throughout, including quotations and notes, on paper of standard size and weight. Margins should be wider than usual to allow space for instructions to the typesetter. All copy should be flush left, with the right hand margin left ragged (unjustified) to maintain even spacing and readability.

4. Revised manuscripts should be submitted in double-spaced hard copy and, whenever possible, on **3.25" diskettes** identifying both the platform (Mac, PC or Other) and the word-processing program used (WordPerfect 3.0, Word 5.1 etc.). All diskette copy should have **formatting stripped out**: it should all be flush left, unjustified, with no special character formats other than underlining (italics).

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a. References to **books** should include author's full name; complete title of the book, underlined (italics); place of publication and publisher's name for books published after 1900; date of publication, including the original date when a reprint is being cited; page number cited. *Example*:

Eduard Suess, *The Face of the Earth*, 5 vols., Vol.I (Oxford: Clarendon Press, 1904), p. 17.

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David R. Oldroyd, "The Archaean Controversy in Britain: Part I—The Rocks of St. David's," *Annals of Science*, 1991, 48:407–452, on p. 434.

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