THE EDITOR'S CORNER

On May 11, 1973 the Eleutherian Mills Historical Library will sponsor a conference entitled "Early Development of Anthracite Coal in Pennsylvania." Papers will be delivered by H. Benjamin Powell, Bloomsburg State College, on "Entrepreneurs and the Evolution of the Pennsylvania Anthracite Industry, 1769–1830," Simeon J. Crowther, Harvard University, on "Anthracite and the Development of Pennsylvania Industry to 1850," and John Hoffman, Smithsonian Institution, "The Technology of the Early Anthracite Industry." W. David Lewis, Auburn University, will act as discussant. Anyone desiring further information or an invitation please contact Richard L. Ehrlich, Eleutherian Mills Historical Library, Greenville, Wilmington, Delaware 19807.

On another Eleutherian Mills note, Professor Thomas C. Cochran will become Senior Resident Scholar at the Eleutherian Mills–Hagley Foundation in the fall of 1973. Dr. Cochran is Benjamin Franklin Professor of History at the University of Pennsylvania, is a former president of the Economic History Association, and is currently president of the American Historical Association.

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Three $3,000 Rovensky Fellowships in business and economic history are being awarded this year by the Lincoln Educational Foundation. We regret that we received the information at too late a time to mention them before the application deadline, February 1. Applicants must be citizens of the United States or Canada and planning to acquire a Ph.D. degree, with either American economic history or American business history as the area of major interest. Those who have demonstrated capacity to pursue graduate work successfully for one year will have an advantage over those who are just beginning graduate study. Study is normally to be done at an approved institution in the United States. Preference will be given to applicants who are preparing for careers of teaching and research.

Inquiries about the fellowships for next year should be directed to C. Clyde Jones, College of Business Administration, Kansas State University, Manhattan, Kansas 66502.

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The Merrimack Valley Textile Museum announces the availability of two "super 8" movie films illustrating two important early textile machines used in the nineteenth-century New England woolen industry. One film (3 minutes long) shows a double-cylinder carding engine of the 1820–1830 period at work. The other film (4 minutes long) is of an 1868 spinning jack operated by a retired mule spinner. Each movie, filmed for demonstration purposes in the museum gallery, is accompanied by explanatory notes written by David J. Jeremy, Curator. The films, costing

$40 each, may be obtained by writing to the Merrimack Valley Textile Museum, Box 266, North Andover, Ma. 01845.

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The Pennsylvania State University Labor Archives has announced the acquisition of the papers of the newly-merged Graphic Arts International Union. These papers include the records of the old Lithographers, Photoengravers and Bookbinders unions and date back to the turn of the century. The collection of the Graphic Arts union will be an on-going project with the union periodically adding new records. The initial size of the collection is estimated at 75 cubic feet. These papers will be open for scholarly use on December 13, 1977.

In addition to the acquisition of the records, an oral history project is to be begun with interviews of more than twenty-five members and officials of the old Lithographers and Photoengravers International Union and the International Brotherhood of Bookbinders.

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Two forthcoming meetings of the Academy of Management will include sessions devoted to management history. The first is the national meeting of the academy, which will be held on August 19–23, 1973 at the Sheraton Boston Hotel, Boston, Mass. Those desiring program information should contact Professor Herbert G. Hicks, College of Business Administration, Louisiana State University, Baton Rouge, Louisiana 70803. The second gathering is the meeting of the southern division of the academy, which will take place on November 8–10, 1973, at the Sheraton-Lincoln Hotel, Houston, Texas. For program information about that meeting, contact Professor John DeVogt, School of Commerce, Washington and Lee University, Lexington, Virginia 24450.

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Among books recently received but not reviewed are Edward S. Dodge, ed., *Thirty Years of American Neptune*, published by Harvard University Press at $10.00, and J. Harry Dubois, *Plastics History USA*, published by Cahners Books and available at a cost of $15.00.

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To the Editor, Business History Review:

Economic historians who welcomed the trend toward the use of rigorous economic analysis can point with no greater pride to anyone than Stanley Engerman and Lloyd J. Mercer and their work on land grant aid to American railroads. Mercer's most recent effort on this subject ("Taxpayers or Investors: Who Paid for the Land-Grant Railroads?" *BHR*, Autumn, 1972) is probably the most rational statement we have ever had on this emotion-charged subject. But it would appear that the estimate which he makes of the actual extent of land-grant and "loan subsidy" assistance must be considered as a maximum level; i.e., it represents the highest possible estimate which historians in the future can conscientiously place on government aid to these western railroads. Without minimizing the value of such an "outside" figure, I would point out several reasons why the "real" figure, although it will never be known, was probably substantially below Mercer's estimates.

In the first place, the retrospective computation of the "present" or "Year 1" value of an anticipated flow of income (in this case, from sales of granted land) must be understood for what it implies. It is like having Collis P. Huntington musing, on his deathbed, "You know, that land grant we got for the Central Pacific was like having $5 million, cash in hand, back there in '63." But Huntington looking backward in 1900 is not the same thing as Huntington looking forward in 1863. In reality, the land grant had *no* present value in 1863; it is, thank goodness, a commonplace now (it once was not) to observe that it was the successful completion of the railroad which gave this land (both that granted to the railroads and that reserved for sale by the government) any value at all. In 1863 there were three big, additive ifs which totaled a staggering risk in undertaking the Central Pacific: *if* the promoters could really solve the unprecedented financing problems which government aid merely ameliorated; and *if* the colossal engineering problems involved in building through rough, virgin land could be defeated, on the spot and under pressure; and *if* the opening of the railroad really did bring settlers in great numbers to this forbidding land, so that land could be sold and — much more important — future crops added to the railroads' traffic; *then* the land would have some value. Now, the economist will insist — validly, I think — that even so, there was *some* rate by which the principle of "benefits deferred are benefits diminished" could be calculated not retrospectively but prospectively as of Year 1. Whatever that rate might be, however, it surely is not adequately expressed by "the annual average earnings-price ratio of all common stocks listed on the New York Stock Exchange during the period." Mercer's Year 1 value of the land grants, therefore, is probably much higher than is justified; besides, since the federal government stood to enjoy the same revenues from previously worthless land as the railroad investors *without risking anything* (the land grants would have reverted to the people in case the projects failed), should not this be deducted from what the people gave the railroads, i.e., the Year 1 value of the land grants? Is it not also customary to deduct from the value of these land receipts, however computed, the value of the special low rates which the land-grant railroads were required to give to the government for the shipment of government goods and passengers?

The foregoing is mainly interpretational, and not likely to cut much ice with the economic historian who is given to discounting by whatever rate comes to hand, but the following comments on the "loan subsidy" part of Mercer's analysis have to do with certain vital facts which still seem not to have found their proper place in this much-studied subject. Is it, first of all, valid to speak of the lower cost of the government loan, as compared with what it would have cost to raise money on a second mortgage placed in "private" channels? Private capital, procured by sale of the railroads' first mortgage bonds and the lent government second mortgage bonds, both at deep discounts from par, financed the C.P. and the Union Pacific. As Mercer comments in footnote 20, the willingness of the "public" (i.e., private investors) to take the first mortgage bonds at all was based in great measure on the faith demonstrated by the government in making its bonds only a second lien on the properties. Without this aid, cash capital would probably not have been available at any price, so how can any dollar value be ascribed to this "subsidy?"

All of this is beside the point, however, for the government not only exacted its pound of flesh — and then some — but almost destroyed the transcontinentals in the process. After the Crédit Mobilier scandal the attitude of government turned extremely punitive. The Thurman Act of 1879 required the roads to pay substantial portions of their net earnings into a sinking fund to guarantee payment of the bonds as they came due in the 1890's. The fund, in turn, had to be invested in senior government bonds which, because they were purchasable only in the market at stiff premiums, yielded barely 2 per cent. The fund turned out to be a disappointment to the government, because it grew slowly, and a burden to the railroads, which, having been built to minimum standards, held out enormous profit leverages if these profits could have been retained for betterments and branch-line extensions.

The Thurman Act provisions, although they had been in no wise anticipated or intended by the framers of the Pacific Railroad Acts, were upheld by the U.S. Supreme Court, and the government "loan subsidy," so far from proving to be cheap credit, thus turned out to be an incubus which helped drive the U.P into bankruptcy and almost did the same thing to the C.P. The burden which the Thurman Act placed on the C.P. is treated in Stuart Daggett's classic *Chapters on the History of the Southern Pacific* (New York, 1922, reprinted 1966). Robert G. Athearn, in his *Union Pacific Country* (New York, 1971), reviewed in the same issue of *BHR* as Professor Mercer's article, demonstrates at length what a perverse drag on the exercise of prudent business judgment the sinking fund was, a drag which eventually caused Charles Francis Adams, Jr., to throw up his hands in disgust. And in noting that Edward H. Harriman and Jacob Schiff had to pay for the U.P., at the bankruptcy sale, a sum greater than the physical replacement value of the road, Athearn truly measures for us the negative value of the government "loan subsidy."

Albro Martin
Assistant Professor of History
The American University

Professor Mercer responds:

Professor Martin's interesting comments raise anew several issues concerning the valuation of subsidies provided to pioneer railroads. In general, I agree with Martin that my estimates of the extent of assistance provided by the land grants and other subsidies do represent, "the highest possible estimate which historians in the future can conscientiously place on government aid to these western railroads." My intention was to derive the most reasonable estimates possible within the data limitations and to avoid any significant bias in either direction. I cannot agree with Martin when he suggests the "real" figure is probably substantially below the estimates presented.

It is correct that the estimates presented are *ex post*. That is simply because the issue to which they are addressed is an *ex post* issue. The issue is the magnitude of the assistance provided by the subsidies in actually paying for investment in the railroads. On an *ex post* basis it is obvious that the various subsidies do have a present value in any selected year. Martin, with his example of Huntington's deathbed thoughts, confuses *ex post* with *ex ante* and substitutes the latter for the former in his discussions. My analysis dealt solely with the *ex post* issue. It should also be noted that, contrary to Martin, the subsidies (the Central Pacific land grant in 1863 is his example) *did* have an *ex ante* present value in the appropriate initial year. That value is equal to what the railroads would have sold the subsidies for in the initial year. Surely it is obvious that the value was not zero, i.e., the railroads would not, and did not, give the subsidies away. The race between the Central and Union Pacific Railroads to build the most miles before they met (with loans and land provided by the federal government for every mile built) is a manifestation of the positive (*ex ante*) present value of the subsidies.

The appropriate rate of interest to use in calculating the *ex post* value of the subsidies is the opportunity cost of capital. The annual average earnings-price ratio is simply an approximation to that value. Since mortgage values are not included in the denominator, the earnings-price ratio is if anything an overstatement of the opportunity cost of capital and my present values of subsidies are biased downward rather than upward as Martin believes.

From the theory of rent, we know that the railroad increased the value of land in the land grant because it represented an improvement in transportation technology which lowered the cost of transportation and raised land rents. The conclusion that the land was worthless without the railroad does not follow from the general conclusion that the railroad increased land values. Some land given the railroads was worthless, but this clearly does not apply to all the land grants as a generalization.

It has been frequently argued that the rise in revenue the government received for lands it retained in the land grant area and the value of the special low rates which the land-grant railroads were required to charge for shipment of government goods and passengers should be deducted from the value of land grant aid in evaluating that aid. There is no economic rationale for either of these deductions. Neither proposed deduction affected the contribution of the land grants toward paying for investment in the land-grant railroads. Moreover, with respect to the special rates it should be noted that the government may have obtained them without the cost to taxpayers represented by the land grants. The fact that non-land-grant railroads gave the same special rates to government traffic as the land-grant railroads supports this hypothesis. (For an excellent discussion of all these issues see Stanley L. Engerman, "Some Economic Issues Relating to Railroad Subsidies and the Evaluation of

Land Grants," *Journal of Economic History*, XXXII [June, 1972], pp. 443–463.)

On the question of the loan subsidy, it is quite valid to speak of the lower cost of the government loans to railroads included in the Central and Union Pacific Systems compared to private loans of similar magnitude as a subsidy. Martin's misapprehensions here appear to stem from further confusion between *ex post* and *ex ante*. He apparently wishes to deal with an *ex ante* question involving an additional counterfactual proposition. I attempt to estimate the *ex post* value of the subsidy as actually provided. The railroads *were* built and *did* receive the cited government loans on which they did not pay full current interest over a thirty–year period. This deferred interest (for as long as thirty years) was in effect a second loan on which no interest was ever paid. No private lender (of sound mind) would have made a loan with the conditions of the initial government loan. The government even relegated its loan to a junior status permitting the railroads to easily sell an equal value of first mortgage bonds. How can these actions not be termed a subsidy of rather handsome magnitude? If anything Professor Martin's comments can be taken to suggest that I have underestimated rather than overestimated the magnitude of this subsidy as he appears to believe.

The Thurman Act of 1878, which required the bond-aided railroads to put 25 per cent (Martin's substantial portion) of their net earnings in a sinking fund against the government loan, was enacted more than a decade after the railroads received the government loan. Thus, they were not subject to the provisions of the Act for a long period in which they could (and did) extend and improve their lines. The sinking fund payments actually made were less than the current interest on the government loan. Perhaps the railroads only earned 2 per cent on the sinking fund, but they wouldn't have earned anything on interest payments to private lenders. In fact, they would have had to pay out much more and would have had even less funds for improvements and branch-line extensions. The Thurman Act was inadequate in several respects, but it is a gross exaggeration to blame it for the financial difficulties of some of the bond-aided railroads.

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