quire?, the subjects and the methods of inquiry, data collection, the problems of induction and of verification and dissemination, and the backwardness of the social sciences. He concludes with a chapter of "practical suggestions."

Tullock offers three reasons why scientists inquire: practicality, induced curiosity, and curiosity. Practicality and curiosity are rather traditional concepts normally subsumed under the rubrics of applied and basic interests. Induced curiosity refers to the process by which researchers are motivated to engage in pure research through extraneous rewards. The author recognizes that reasons for undertaking research are complex and that these distinctions are difficult to maintain in actual cases, but he stresses their analytic usefulness. His discussion of the relationship of pure to applied science and the limitations of induced research is well done.

The relationship between applied and pure research is discussed in some detail, with particular emphasis given the part played by the practical application of pure research findings in the verification process of science. Indeed, according to Tullock, it is the principle of replicability and verifiability that unifies scientific inquiry. The effectiveness of science as a cumulative endeavor results primarily from the reliance on verification and replication that prevents the perpetuation of results based on fraud, unconscious bias, or accidental error. Here, perhaps, in the manner in which science makes visible the relationships that exist within a given system, lies the heart of what differentiates science from other kinds of human activity. Tullock correctly draws a sharp distinction between the formulation of a hypothesis and its verification. The scientific method applies to the latter; the former appears to be more or less an art, including accident, serendipity, and logical progression among its sources.

Tullock criticizes the university system, which he says induces curiosity through extraneous rewards, one result of which is the writing of a multitude of minor or even meaningless papers. On a number of grounds he questions whether the university is an optimal setting for pure research. Particular victims of induced curiosity are the social sciences, which Tullock labels "backward." While his reasoning in spots is tortuous, and his ascriptions of causality not fully convincing, his underlying point about the banality of much social science work is self-evident. I suspect, however, that the ratio of banality to important work in the social sciences approximates that in other sciences, though perhaps social scientists are more apt to get their banalities published. In any case, more documentation of Tullock's assertions is in order.

Indeed, the book, despite its readability and the incisiveness of many of its author's comments, must be faulted because the author does not provide systematic evidence in support of his position or consider the systematic evidence of others. For instance, Tullock says that separation of teaching and research would probably not harm research and might improve teaching. Contradicting this are results of a study by Pelz and Andrews, who found that the best researchers were those whose work was diversified, that is, who were engaged in teaching or some other activity in addition to research. Studies by Marcson and Ben David also are relevant to Tullock's discussion of the university. The social organization of science has been dealt with systematically by Marquis, Pelz, and myself, among others, and Glaser and Krohn have dealt with the motivation of researchers. The scope and conclusions of these and other studies that could have been cited may not be as broad as Tullock's speculations, but the studies are systematic and they do throw doubt on some of his conclusions.

If the history of science tells us anything, it is that logical, speculative structures are not reliable in and of themselves. If this were not so then there would be little need for verification. This is as true for the study of science as for science itself. In a review of the literature dealing with organizational aspects of science, Ann Folger Decker and I compared speculative discussions with systematic observations and found that in two-thirds of the comparisons the systematic observations contradicted in part or totally the conclusions based upon speculation. Speculation and unsystematic observation are starting points in any given area of inquiry, but under no circumstances can speculation replace systematic investigation. In too many books and articles dealing with the organization of science this is precisely what happens. Systematic evidence is overlooked or neglected by authors who would sharply criticize researchers in other areas who rely on speculation where systematic evidence is available.

If *The Organization of Inquiry* had been written a decade ago my review would have been much more sanguine. But, in the last ten years a number of systematic investigations of direct relevance to the subjects Tullock discusses have been undertaken, and his failure to consider them leads me to feel that on balance the work obscures more issues than it clarifies.

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Ancient Nubia

Lost Land Emerging. WALTER B. EMERY. Scribner, New York, 1967. 350 pp., illus. $7.95.

This is a book for the general reader with an intelligent interest in archeology. Emery is one of the leading figures in the field and is prominent in the special area of Egypt. The book thus commands more than a little attention. Emery presents a straightforward account of the role archeology has played in the discovery of ancient Nubia, a role which the High Dam at Aswan has made especially important in view of the fact that the Nile waters now cover most of the sites which marked the Nubian past.

It is something of a historical quirk that the gradual submergence of the Nubian heartland which began with the Aswan dam early in the century and is now completed by the new dam motivated important developments in the field techniques of modern archeology. Reisner's seriation approach, the sensitive salvage of human and other organic remains, and the full realization of interdisciplinary methods are some of these developments. Emery does full justice to these achievements, so that the book contains a valuable description of an important chapter in the annals of Egyptology.

The greater part of the book is concerned with the efforts made by archeology to salvage the Nubian monuments and a historical account of Nubia with the pertinent archeological discoveries highlighted. The writing is excellent, but the real glories of the book are the author's illustrations, which are probably without peer in archeological publication.

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