plines.) Much of the value and vitality of Aristotle and Plato, Pestalozzi, Kant, LePlay, or Darwin breaks through into geography through coincidences in the lives of unconventional geographers.

Another recurrent theme is the teaching role of the great geographers. It is not surprising to find that pioneering scholars are influenced by their experiences as pupils and colleagues of several "masters," although in American universities we are less accustomed to celebrating our intellectual extended families with festschriften. Some great teachers and stimulating colleagues—Hettner, Richthofen, Ratzel, Waibel, Vidal de la Blache—seem to have had a more profound effect on geographic research over the generations through their teaching and personal roles than through their writings, which quickly became dated. Other men, whose research was equally meticulous and original and filled whole stacks in libraries but who were less successful teachers, have been wholly forgotten. From Dickinson's history, it looks as if "publish or perish" is a short-term game. In the long run, we also teach or we perish.

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Seeking Confluence

Streams of Culture. GAVIN DE BEER. Lippincott, Philadelphia, 1969. 262 pp. $5.95.

Of the debate on his phrase "the two cultures" C. P. Snow once remarked that only its definite article had emerged unscathed (*The Two Cultures: and A Second Look*, Mentor, 1964, p. 60). Where Snow saw, in Western culture, an unfortunate division between scientists and literary intellectuals, Gavin de Beer detects a richness of many streams, united in their "use of the same mental processes, and in particular of the gift of imagination, the creative 'art' " (p. 10). This book of essays represents de Beer's attempt to wade in several of the units of his metaphor.

The 12 essays, two new and ten previously published, fall into four categories. The opening selections deal with the history of evolutionary theory and genetics. Of these, I highly recommend the first two. These incorporate the many new insights—particularly on Darwin's limited debt to Malthus—that de Beer gained from Darwin's notebooks on the transmutation of species (the sources for a later "abstract," the *Origin of Species*). The second group covers some of de Beer's personal contributions to evolutionary biology (the role of pedomorphosis in human evolution and the importance of mosaic evolution in the origin of vertebrate classes). The third contains reviews of books by Dobzhansky, Simpson, and the Toulmins. These are a mixture of interesting points, repetition, and irrelevancy. While I would not insist that the journalist's adage "yesterday's paper wraps today's garbage" must apply to all old book reviews, this genre does not abound in examples of timeless prose. The final section includes three essays on archeology and ancient civilizations, a field that de Beer has pursued recently with much ingenuity and grace (*Hannibal's March*, Sidgwick and Jackson, 1967). The first of these, "Genetics and Prehistory," is, to my mind, the showpiece of this book. In this Rede Lecture, delivered six years after Snow began the "two cultures" debate from the same podium, de Beer shows how the evidence of modern "genes, place-names, and customs" can be used to reconstruct the wanderings of Neolithic Mediterranean peoples about Western Europe. It serves, far better than his explicit pleas, to demonstrate the power of a confluence in our cultural streams. The last two essays are new, but by no means novel—a defense of Galanopoulos's equation of Plato's Atlantis with the Minoan empire, and some comments on Norse settlements in America.

Unfortunately, this volume suffers the common ills of essay collections: it is often repetitious and is uneven and lacking in coherence. Thus, on the first count, de Beer cites the shoulders of Newton's giants to introduce two essays (and give R. K. Merton two more entries for his compendium of pre- and post-Newtonian uses of that metaphor —*On the Shoulders of Giants*, Harbinger, 1965); we receive four explanations of Fisher's theory of dominance and four citations of Deevey's estimate that our global population was a mere 125,000 one million years ago. Second, the essays range from semipopular presentations for UNESCO to contributions to technical symposia. Those who fathom the arcane anatomy of fossil evidence for mosaic evolution may be bored with the UNESCO essay, while, in the absence of definitions, those who favor the easier reading will have no other referent for "supergene" than a recent presidential contender.

Finally, on the subject of coherence, I can see two ways of breaking the wall between Snow's two cultures. One can construct a coherent argument that it does not (or at least should not) exist, or one can simply place his diverse work before the public as a testimony that one man, at least, can do more than one thing well. The great danger of this second strategy, one that de Beer does not avert, lies in the use of *ecce homo* as a justification for the union of diverse chapters bearing no common theme or unifying thread. I suspect that our greatest practitioners of this strategy in evolutionary biology, Simpson and Medawar (G. G. Simpson, *This View of Life*, Harcourt, Brace and World, 1964, and *Biology and Man*, Harcourt, Brace and World, 1969; P. B. Medawar, *The Art of the Soluble*, Methuen, 1967) succeeded because they had no such grandiose goal and thereby felt a greater need for internal coherence.

Another aspect of his writing foils de Beer's attempt to unite the streams: his tendency to caricature the positions he opposes and to refute intellectual positions of some subtlety by demolishing irrelevant straw men. Thus, theologians will be rightly displeased that de Beer dismisses their claims by attacking a certain Father O'Neill and showing the scientific improbability of the virgin birth (pp. 16–17). And philosophers of science will be disturbed by the statement that a popular theory on the nature of scientific "truth" embodies the attitude that forged the Galilean inquisition (p. 166). I detect the specter of an otherwise distinguished American educator who, in an area far beyond his competence, once almost blamed Darwin for the evils of Nazism (J. Barzun, *Darwin, Marx, Wagner*, Doubleday, ed. 2, 1958, pp. 15–16).

When I look from my secluded corner of intellectual endeavor back to the days when Dryden joined the Royal Society and Thomas Jefferson wrote papers (however faulty) on fossil quadrupeds, I am profoundly grateful to all intelligent men of de Beer's caliber who try to break down the barriers to communication among disciplines. But I question the format of this particular work. Rather than dusting off yesterday's essays, I hope that de Beer will develop even further the promise of his Rede Lecture—to unite the streams of culture by showing that the methods and materials of natural science can solve persistent problems in other fields.

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