apart from informing us about the quality of the author's work, the absence of bonding among those primates that are phylogenetically closest to man would strike a sharp blow against Tiger's thesis.

Returning to bonding itself, we see that when he has to go beyond the definition already quoted Tiger comes to grief. Thus, in the discussion of baboons, bonding becomes a tendency or propensity for linkage displayed by individual animals, some possessing the quality more strongly, or displaying it to a greater degree, than others (p. 37). A denouement of sorts is reached when Tiger is forced to confess that "it is difficult to specify the central constituent of the bonding process. This is, of course, the critical gap in the argument" (p. 152). Male bonding, it would seem, is some kind of behavioral phlogiston.

Unfortunately for Tiger, the uncertain nature of bonding is not the only thing that provides a critical gap in his argument. Moving to his use of ethnology, we find serious flaws of method and theory, not to say fact, the latter primarily resulting from a welter of controvertible assertions based upon too limited or too narrowly selected data.

Tiger's statement, central to his thesis, that "when a community deals with its most vital problems . . . females do not participate. The public forum is a male forum" (p. 57), is absurd and provides evidence of a far-reaching miscomprehension of the political process. This faulty view is carried through in his largely implicit but pervading assumption that manifest political statuses are in close, perhaps one to one, correlation with the structure of political action. Such inadequacies in Tiger's comprehension of theory are complicated by what seems to be contempt, sometimes ambivalently expressed, for empirical data. I have already given a few examples of his running roughshod over and through the primate data. Now we find him declaring (p. 59) that since this is an exploratory study it would be premature for him to engage in a study of his own or other cultures. Furthermore, he does not think the data in the Human Relations Area Files particularly useful for his project, because they were selected and arranged in terms of categories erected for other purposes. Despite these avowals, Tiger declares his approach a "mélange" which includes some aspects of the denigrated methods, plus "perusal of ethnographic monographs." To this reader, however, the use of comparative ethnographic material seems extremely limited.

Tiger passes off the important question of ethnographic evidence of female bonding, accomplishing this partly by referring (p. 71) to Robert Lowie's dictum "that a genuine matriarchate is nowhere to be found." It is of some consequence to note that Tiger presents this statement in the context of a longer quotation from Lowie's *Primitive Society*. Tiger cites the English edition; the edition I have (Liveright, New York, 1920), which seems to be the original one, shows a passage which differs from Tiger's in no semantic respect, but does vary in three minor details of orthography, in addition to lacking a brief explanatory parenthesis I would guess was added by Tiger, although it is not so marked. More objectionable is Tiger's exceptionally tight selection of just the words he wishes to best make his case. The reader will probably not know that the quoted phrases are immediately followed by a qualification: "though in a few places feminine prerogatives have evolved to a marked degree in certain directions" (p. 191). It is worth pursuing the matter one step further. It would seem to throw some light on Tiger's method that he evinces no curiosity about Lowie's adherence in his later work to the quoted view. In fact, that view became somewhat less severe. In *Social Organization* (Rinehart, New York, 1948) Lowie, after noting, by way of example, that some women in China "seem to have exerted a tremendous influence even on public life," concluded, "It appears then that the question of correlation is not at all a simple one. Certainly it is false to accept either rule of descent as a token of unqualified dominance by the ostensibly favored sex" (p. 264).

Tempted as a reviewer may be to complement criticism by presenting a counter-case, space forbids. Let me conclude, therefore, with apologies for brusqueness, by noting that Tiger has deliberately undertaken to write provocatively, essentially in hypothetical and speculative terms, about a thesis for which no Q.E.D. ending is possible, as he himself states (p. 194). Yet the questions he raises are not quite like those, superficially similar in form, that have been posed by a myriad of others. The difference is that Tiger is touching upon issues which affect the quality of human life at large and which often play out in deadly serious conflict, waste, and tragedy. The author's awareness of this distinction is particularly evident in his last chapter, which actually offers suggestions for social engineering based on his findings. That chapter, the entire book, shows basically more resemblance to a partisan political tract than to a work of objective social science.

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Papers of an Astronomer

Herschel at the Cape. Diaries and Correspondence of Sir John Herschel, 1834–1838. Edited with an introduction by DAVID S. EVANS, TERENCE J. DEEMING, BETTY HALL EVANS, and STEPHEN GOLDFARB. University of Texas Press, Austin, 1969. xxxviii + 398 pp. + plates. $10. History of Science Series, No. 1.

Sir William Herschel, sweeper of the skies, discoverer of Uranus and of visual binaries, has been rightly called the father of stellar astronomy. He was also the father of Sir John Herschel, who was a most distinguished scientist in his own right, but whose work has been somewhat overshadowed by his father's. Father William started his career in poverty, his first employment being as an oboist in the Hanoverian Guards. He became one of the most famous scientists of his time and amassed a large fortune through the sale, for a total of some £16,000, of telescopes of his own making. John was an only son and had every advantage in training, education, and freedom from financial worry. Perhaps he would have been accorded his rightful place in astronomical history if he had made the discovery of the planet Neptune that he so narrowly missed.

This book deals with the years 1834–1838, Sir John's four years spent at the Cape (of Good Hope), as recounted in his diaries and his letters home. He erected an observatory at Feldhausen, near the base of Devil's Peak, a few miles south of Cape Town. His telescope was a meager 18-inch reflector, crudely mounted. Nevertheless, he completed his father's deep sky survey and catalogued 1700 clusters and nebulae and 2100 double stars. Today such sky surveys are best done with large

Measurement of a base line on the Grand Parade in Cape Town, December 1837. The project was directed by Thomas Maclear, who became director of the Royal Observatory at the Cape of Good Hope about the time Sir John Herschel arrived there. "One of Maclear's official tasks was to verify [the Abbé N. L. de] Lacaille's survey work, which had produced an anomalous value for the length of a one degree arc of the Earth's meridian in the Cape area." Maclear "began with an historical investigation to discover exactly what Lacaille had done. He first tried . . . to measure a base line on the low-lying ground near the Observatory, but floods . . . spoiled the line." Finally, after several other efforts of varying success, "Maclear completed a new base line on the Parade, marking the ends with old guns sunk vertically into the ground." Herschel assisted in the project but was not present at the event illustrated. "Your expedition in matters of business . . . proves to me that I am getting hardly fit to inhabit a bustling world like this," he wrote to Maclear. "While I speculated on how long it is to take to get the guns—how long to get them sunk—how long to take up and sink again in consequence of detected errors—and how long to get all in order—behold your Parade base is measured." Later Herschel, "not to be outdone," measured a base line of his own. [Reproduced in *Herschel at the Cape* by permission of South African Archives, Cape Town]

Schmidt telescopes, photographically, in two colors; and 1969 is similar to 1834 in that we need another John Herschel to complete the National Geographic–Palomar Sky Survey to the south celestial pole. It is possible today to build even larger Schmidts than that used at Palomar, which could survey the universe to a volume an *order of magnitude* greater.

The Cape was—and is—beautiful country; it was, and is, even more interesting than it is beautiful. Sir John was a man of great energy and wide-ranging curiosity, and his diaries make fascinating reading. The editors have done an excellent job, with their many detailed footnotes, in the difficult task of explaining Sir John's short and abbreviated remarks. The diaries record personal and social history, the excitement of travel by sea and by horse, political intrigues, gossip, the exciting flora and fauna of southern Africa, and scientific experiments dealing with air pressure, magnetism, and the shape of the earth.

Sir John returned to England to a rapturous welcome and a baronetcy conferred on him by the new queen. Shortly thereafter he discovered hypo as a fixer, and he invented the terms *positive* and *negative*, now in general use. He was never again to use his 18-inch reflector, even though his four years at the Cape with it were his most creative. A good biography of this remarkable man is urgently needed, in English. The editors are to be commended for their long labor of love in making so much source material available.

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