achievement in itself. Unhappily, an archeologist's photographs have once again been so reduced and printed so badly that many are virtually useless—particularly in the case of monuments and carvings included in the survey.

Pollock's commentary shows throughout the good sense and acumen of an architectural expert and the modesty of one who knows that if he could do the survey today he would do it differently. There are, however, lacunae in interpretation as well as data. I find no mention of the work of the architect Horst Hartung and the astronomer Anthony Aveni, who have had much to say about the orientation and placement of Maya buildings, including those at Uxmal. There is no attempt to deal with the iconography of Puuc architectural ornament, especially the masks over doorways and at corners. And the great causeways or *sacbeob* within and between sites are scarcely mentioned.

Despite its shortcomings—and what archeological report is free of these?—this is a monumental work on one of the world's major architectural styles.

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Primate Parental Relations

Baboon Mothers and Infants. JEANNE ALTMANN. Harvard University Press, Cambridge, Mass., 1980. xiv, 242 pp., illus. $17.50.

The helplessness of human and other primate infants means that they rely heavily on their mothers for protection merely in order to survive. Over ten years ago John Bowlby therefore suggested that if the significance of maternal behavior is to be understood psychology must unite with biology. The causes and consequences of the way mothers and infants interact, he argued, should be viewed from an ecological perspective.

Until recently Bowlby's advice has been heard but not acted on. Most studies of the social development of primates have been carried out in captivity. Jeanne Altmann's book is therefore a landmark. Drawing on eight years of demographic data and 15 months of observation in a natural habitat, she assesses the nature and extent of external influences on baboon mothers and infants. Altmann provides detailed descriptions of the course of the mother-infant relationships and relates individual differences to the constraints and opportunities different pairs happen to face. In doing so she not only indicates how ecological and social pressures mold mothering styles but significantly deepens our appreciation of the complexity of baboon social organization.

The harsh problems of survival are emphasized throughout. The study site was in one of the simplest and most arid ecosystems inhabited by primates, an area of scattered *Acacia* woodlands in Amboseli National Park, Kenya. Newborn infants had a 50 percent chance of dying before the age of two, and there were data suggesting that females had higher death rates when accompanied by dependent infants. With the aid of a simple model, Altmann argues that to provide enough food and care for their infants mothers sacrificed their own condition. In Amboseli there is no daily provisioning of laboratory feed, so food and time are in short supply.

The central result concerned a distinction between two types of mothers. "Laissez-faire" mothers were tolerant of other individuals approaching, grooming, or playing with their babies and were generally calm. For instance, they had low rates of glancing at their neighbors. "Restrictive" mothers showed opposite tendencies, and as a result their infants remained dependent for several months longer than those of laissez-faire mothers. Altmann argues plausibly that calm mothers are likely to be more successful at rearing their infants. This might imply that restrictive mothers were behaving maladaptively, but data suggest they were using the best style available to them. Thus, they tended to be subordinate individuals whose infants would have suffered from being grabbed by peers if they were not protected as effectively as possible. Like many of Altmann's results on the mother-infant relationship, this conclusion confirms and extends those of laboratory workers.

Like most field studies of primate behavior, this was conducted on a single group. Such a narrow focus has disadvantages, but here it meant that long-term information was available on many aspects of individual behavior and relationships. It was possible, for instance, to use mother's age and probable identity of infant's fathers as independent variables, and several results benefited by being related to data collected by colleagues on other topics. The book is rich in fascinating asides, such as that dominant mothers tended to have female babies.

Lucid writing, careful methods, excellent illustrations, and several appendixes make the merits of this study easy to appreciate. Its main drawback is its small sample size (18 mother-infant pairs, of which eight were observed for six months or more). Though the data base was larger than in most captive studies, the fact that only a few pairs could be observed, and none for many hours, makes some interpretations questionable. Thus, Altmann suggests that some individual differences had more to do with personality than with age or dominance rank. Without tests of the reliability of the behavioral samples, however, it remains possible that apparent differences emerged by chance. Personality differences raise important problems concerning both the ultimate and the proximate sources of variation in reproductive success, and Altmann points the way to further work. Several studies of social development in wild primates are currently in progress, and more will surely now be stimulated. The researchers conducting them will do well to emulate the broad perspective and tidy conclusions displayed in this model of a book.

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Anion and Calcium Transport

Membrane Transport in Erythrocytes. Relations between Function and Molecular Structure. Proceedings of a symposium, Copenhagen, Aug. 1979. ULRIK V. LASSEN, HANS H. USSING, and JENS OTTO WIETH, Eds. Munksgaard, Copenhagen, 1980. 558 pp., illus. D. kr. 275. Alfred Benzon Symposium 14.

The red cell has long been a favorite vehicle for the study of membrane transport. Even in this era of tissue culture, membrane vesicles, and reconstitution, the mammalian red cell has some unique advantages. Its only membrane is the relatively simple (in terms of protein composition) outer plasma membrane. Because there is no internal structure or compartmentalization, the internal concentration of most solutes can be determined unambiguously. By the use of ghosts or vesicles, alteration of the internal composition can be accomplished easily, allowing independent control of the composition on the two sides of the membrane. The best example of the exploitation of these advantages is the characterization of the Na-K-adenosine triphosphatase pump. Nearly everything