Ottosson, Torgny (1988). What does it take to read a map? *Scientific Journal of Orienteering*, 4, 97–106.
reviewed by Jeremy Crampton, Penn State University

Can children understand maps "early and easily," or do they find maps difficult, not at all "transparent"? This is the main question addressed by Ottosson in his review of a brief selection of literature on the topic. And it is certainly an important question in this time of geographic ignorance. If children readily understand maps, geographic education need not devote much effort to them, and could possibly even ignore them. On the other hand, if map understanding is an effortful process, explicit formal training may be necessary.

Ottosson largely accepts the former position. Since "most spatial relationships on many maps are the same as the relationships between the corresponding real-world features" (p. 101), it is possible for children to have a basic understanding of maps. A large number of his references are from the Sheffield Research Program (UK), one conclusion of which is that young children can easily use maps.

However, this kind of position has been repeatedly criticized. Piagetian as well as cartographic theory would argue that map understanding does *not* come "early and easily." There are also empirical problems with such arguments. Ottosson appears to be aware of these criticisms, but rather too easily dismisses them (in a single sentence) before going on to make the assertion quoted above. The trouble with this position is that it merely pushes the problem backwards; instead of striving to understand how children comprehend maps, the task instead is to understand spatial comprehension of the environment (skills which are then somehow applied to map comprehension). Environmental comprehension is a worthy goal, but the overall impression gained from this type of argument is that maps are just reflections of reality that do not involve human creativity or categorization.

Other parts of the article are concerned with showing that map projection (i.e., perspective), symbolization, and scale are not problematic for young children. Ottosson presents some results from an experiment he did involving five year old children who were asked to describe "a rather complex road map." Although there were errors (which seem to reflect the child's reification of symbols, consistent with Piagetian theory), Ottosson nevertheless claims that symbolization is not a crucial problem.

Although there is no doubt that children can learn spatial relations (such as proximity) early on, it is misleading to claim that this means map understanding follows naturally because "in essence . . . map understanding is spatial understanding" (p. 102). It ignores the fact that maps are creative realizations, not degraded pictures of reality. Ottosson's teaching examples depend on showing literal similarities between the environment (a road bend) and the map. This is not necessarily "incorrect," but as he admits himself, it takes attention away from the map's role, it's form and also the active participation of the child.

Miller, David; and Modell, John (1988). Teaching United States history with the Great American History Machine. *Historical Methods*, summer 1988; pp. 121-134.
reviewed by Karl Proehl

The Great American History Machine (GAHM) is a computer-based tool used at Carnegie-Mellon University for interactively accessing and exploring county-level census and election data through a map interface. GAHM was designed as a teaching application to be used for generating and exploring hypotheses rather than for formally testing them.

On the basis of field testing GAHM, the authors belive that this software opens up new possibilities for enabling students to approach historical problems empirically and analytically. A sensible way to use computers in introductory history courses is to facilitate the search for patterns in large bodies of data. GAHM is designed to make data accessible through a medium that invites the search for patterns—the choropleth map.

Six exercises were mentioned along with a series of maps. The authors found that students in this course were much more engaged with the material than is normally the case in introductory history courses.

An excerpt from **Mary Kingsley, *Travels in West Africa***, London: 1897.
Submitted by Pat Gilmartin, University of South Carolina.

Mary Kingsley was an English explorer who explored the Ogowé and Rembé rivers of West Africa in the late 1900's. During her forays there, she collected specimens of fish for the British Museum and continued her father's studies of the religions and laws of primitive societies. She travelled alone, mostly by canoe, hiring native guides along the way. One afternoon, she and her party stopped at a village of the Fan cannibal tribe to ask about villages further upstream. The following is Kingsley's description of the map which the Fans created for them.