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Commentaire

COMMENTS ON "GEOLOGY OF THE SHEGUIANDAH EARLY MAN SITE: KEY CONCEPTS AND ISSUES" BY ROBERT E. LEE

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R.E. LEE (1986) has recently reviewed in this journal the case for early human occupation of the important Sheguiandah site on Manitoulin Island, Ontario. His comments do not provide results from any new work on this site, but serve the commendable purpose of renewing interest in the site, which was excavated and described about 30 years ago by T.E. Lee. At that time T.E. Lee, in consultation with several geologists, made the very controversial interpretation that Man occupied the site at least 30 ka ago, and perhaps as long ago as the last interglacial. Prevailing opinion favoured a maximum span of about 12 ka for human presence in America and T.E. Lee became such a focus for controversy that the full results of the Sheguiandah work were never published and he himself had to leave the field of professional archeology for several years. Later writings expressed his frustration and bitterness. Some parallels can be drawn with the experiences of W.J. Patterson some twenty years earlier, recently recounted by JACKSON (1986). It is noteworthy that Patterson, as editor of the *Manitoulin Expositor*, was also extensively involved with the Sheguiandah site, aiding in the campaign leading to its designation as an important historic site and the establishment of a small museum nearby (JACKSON and McKILLOP, 1987).

I never had an opportunity to visit the excavations when they were open, having arrived later to work in Ontario, but soon after arriving I joined the Ontario Archaeological Society and heard from its members something of the work done at Sheguiandah. It was evident that there was some rift between amateurs and professional archeologists at that time and the amateurs tended to sympathize with T.E. Lee. Then and subsequently I have read with great interest the various papers that have appeared on the Sheguiandah site (see R.E. LEE, 1986 for a list). Rereading of those papers following the appearance of the recent one by R.E LEE (1986) is the basis of the comments now made.

The context of the Sheguiandah work is important to understanding some aspects of the controversy and interpretations made. Excavations were active in the earliest years of radiocarbon dating. Many of the earliest dates of that day were determined by the solid carbon method, subsequently replaced by other methods which showed that many of the early dates were inaccurate. Available chronologies were based on very few, often inaccurate, radiocarbon dates. Among the early chronological conflicts was that between the varve chronology, espoused by Antevs' and the new radiocarbon chronology. Several of Antevs' latest papers dealt with that controversy by making small adjustments in the varve chronology, but in the end concluding there were major flaws in radiocarbon dating. It was principally Ernst Antevs that was consulted by T.E. Lee for a chronological interpretation of the site. Varve chronology was already in disrepute in America at the time of the Sheguiandah work and was quickly replaced by a younger radiocarbon chronology. The principle of the method of varve counting chronology has been subsequently vindicated in America (but remains an unfashionable method), and has always retained validity in Scandinavia, where little conflict with radiocarbon chronologies developed. Also, radiocarbon chronologies in America have undergone many changes, one of the most notable arising just after the appearance of a major revision of Great Lakes history by HOUGH (1958), prompting him to present a further revision (HOUGH, 1963). By then, most of the original research results ever published on Sheguiandah had appeared and have not generally been recast in the light of subsequent work. It is important to emphasize though, that Antevs never visited the site (T.E. LEE, 1974) but participated through correspondence and discussions with Lee.

Two stratigraphic sequences represent the order of events at the site. One was exposed in an organic deposit studied palynologically by J. Terasmae, where artifacts underlay peat dated at the base as about 9 ka. Initially in conflict with a very young Great Lakes chronology, it was later found to be generally compatible when the chronological framework was revised upward (but still much younger than the varve chronology).

The other sequence, and the one really central to the controversy about the age of the site, is one in which two layers of "till" (lumped under the term "mictolite" by SANFORD, 1971) underlie and contain artifacts and overlie lacustrine silt containing artifacts, the total thickness on top of bedrock being about two metres. T.E. Lee sought the opinions of many visiting geologists. SANFORD (1971) said that none of a large group of the Michigan Basin Geological Society which visited in 1954 questioned the identification

of the "till" as glacially deposited. It should be noted, however, that this group is predominantly one of Paleozoic stratigraphers, with little experience with glacial geology. It should further be noted that J.T. Sanford, the chief geological consultant during the work, was also a bedrock specialist. Perusal of his list of publications reveals they are almost entirely in the area of Paleozoic paleontology. Evidently almost his sole involvement with Quaternary geology, at least as indicated by published work (SANFORD, 1957), was his participation in the Sheguiandah project. It is evident in his later (1971) paper on the site, that he was not fully aware of the latest literature in Quaternary geology. Statements such as "this must be left to the students of Pleistocene geology" (SANFORD, 1957, p. 139), "discussion of the low level lake ... will be left to specialists in this field ..." (SANFORD, 1957, p. 142), and "A more detailed correlation with the regional Pleistocene and Recent chronology will have to be done by students in that field" (SANFORD, 1957, p. 144) reveal that Sanford did not regard himself as a Pleistocene specialist. Discussions I had with some of the visitors to the site who were experienced in glacial geology revealed strong reservations about identification of the "tills" as glacially deposited. Controversy is now widespread over the identification of true till and numerous varieties are now distinguished (DREIMANIS, 1982) as a result of close attention to sedimentological characteristics and study of sedimentation in active glaciers.

R.E. Lee's (1986, p. 328) statement that "The major criticism directed against the Sheguiandah Site, in 1985 as it was in 1955, can be paraphrased thusly : 'If there are artifacts, then those deposits cannot be till'!" is too broad. Surely he would agree that the probability of till containing artifacts *is* small indeed. However glacial ice incorporates whatever the ice overrides. Reworked fossils in till are not unknown (*e.g.* NIELSEN *et al.*, 1986) ; if fossils, why not artifacts? R.E. LEE (1986, p. 329) also remarks that "the till was also identified by positive means. The unsorted structure was verified by sediment analysis (in T.E. LEE, 1978, p. 87)". T.E. LEE (1978) presents results of sieve analysis of the sand and fine gravel fractions of two samples (one upper, one lower "till"). While size analysis may support the conclusion that a sediment is till, it is by no means positive proof as implied by T.E. LEE (1978) and R.E. LEE (1986).

A significant detail which has been given little emphasis was mentioned by T.E. LEE (1957, p. 119). In the sub-"till" lacustrine sediments was noted "the vein tracings of what may have been a maple leaf". Although described in tentative terms, if correctly identified this would pretty well require deposition in interglacial conditions. As far as we now know, the climate has not been warm enough to support maple trees in the Sheguiandah area any time during the Wisconsin Glaciation ; such vegetation would clearly require deposition during an interglaciation (the last was around 100 ka ago) or since maple arrived in postglacial time, some 8 ka ago (WARNER *et al.*, 1984). One has to wonder if the specimen was saved and could be examined by a plant specialist. As it stands, the mention in uncertain terms is tantalizing. The markings may not be maple, or even of organic origin.

There have been many changes in the reconstructions of Quaternary history during the last 30 years. Similar important changes have affected archeology. Earlier (pre-12 ka) arrival of Man in America is now espoused by many archeologists, although still hotly contested by others. There are now many more sites described in the literature, though usually the subject of much argument, which support earlier human presence. The idea of an "Early Man" site on Manitoulin Island now faces a different and more accepting environment. A few years ago there was talk of reopening excavation at the Sheguiandah site, but other priorities intervened. Although many of the observers of 30 years ago are now no longer with us (T.E. Lee, E. Antevs, J.T. Sanford, B.A. Liberty, to name a few of those directly involved) some are still available who could relate new observations to the old. It is already late, but efforts should be made to renew the study of this important site as soon as possible. There are now available new techniques for dating such as thermoluminescence (WINTLE and HUNTLEY, 1982) and electron spin resonance (HENNIG and GRUN, 1983) which could be applied to the sub-"till" lacustrine sediments. Terasmae (LEE, 1957) noted organic debris in sediments below the dated peat deposit (basal date of about 9 ka) which might be dated by the Isotrace accelerator facility at Toronto. There was recently scheduled a Penrose Conference (Geological Society of America) on till genesis, originally announced as on Manitoulin Island but later relocated to Toronto, which brought together a large group of till specialists. The attention of such a group to the origin of the controversial "tills" at Sheguiandah could be of great benefit to the understanding of this important site.

Restudy through reexcavation at the site should be given high priority by those archeologists in a position to launch a comprehensive study. It is of great importance to archeology in Canada, in America, and in the world. It is also of great importance to Quaternary geology to test present historical reconstructions regarding timing of ice advances and Great Lakes history. Confirmation or rejection of the presence of interglacial sediments on Manitoulin Island is of great interest.

Comments on this discussion by B.G. Warner and C. Ellis, University of Waterloo, were much appreciated but the content is the responsibility of the author.

REFERENCES

DREIMANIS, A (1982) : Genetic classification of tills and criteria for their differentiation : Progress report on activities 1977-82, and definitions of glaciogenic terms, *in* C. Schluechter (ed.) *INQUA Commission on Genesis and Lithology of Quaternary Deposits,* p. 12-31, Zurich.

HENNIG, G.J. and GRUN, R. (1983) : ESR dating in Quaternary geology, *Quaternary Science Reviews*, Vol. 2, p. 157-238.

HOUGH, J.L. (1958) : *Geology of the Great Lakes,* University of Illinois Press, Urbana, 313 p.

——— (1963) : The prehistoric Great Lakes of North America, *American Scientist*, Vol. 51, p. 84-109.

JACKSON, L.J. (1986) : Figgins and Patterson : the forgotten beginning of Ontario Palaeo-Indian studies, *Arch Notes*, 86-4, p. 11-16 (Ontario Archaeological Society, Toronto).

JACKSON, L.J. and McKILLOP, H. (1987) : Patterns in Ontario prehistory : the Sheguiandah site, 1952-1956, *Arch Notes,* 87-1, p. 9-15 (Ontario Archaeological Society, Toronto).

LEE, R.E. (1986) : Geology of the Sheguiandah Early Man Site : key concepts and issues, *Géographie physique et Quaternaire*, Vol. 40, p. 325-330.

LEE, T.E. (1957) : The antiquity of the Sheguiandah site, *The Canadian Field-Naturalist*, Vol. 71, p. 117-137.

——— (1974) : Ernst Valdemar Antevs, *Anthropological Journal of Canada*, Vol. 12, p. 18-20.

——— (1978) : Sheguiandah and early man, *in Geology of the Manitoulin area*, Michigan Basin Geological Society Special Papers No. 3, p. 87-89.

NIELSEN, E., MORGAN, A.V., MORGAN, A., MOTT, R.J., RUTTER, N.W., and CAUSSE, C. (1986) : Stratigraphy, paleoecology, and glacial history of the Gillam area, Manitoba, *Canadian Journal of Earth Sciences,* Vol. 23, p. 1641-1661.

SANFORD, J.T. (1957) : Geologic observations at the Sheguiandah site, *The Canadian Field-Naturalist*, Vol. 71, p. 138-148.

——— (1971) : Sheguiandah reviewed, *Anthropological Journal of Canada*, Vol. 9, p. 2-15.

WARNER, B.G., HEBDA, R.J., and HANN, B.J. (1984) : Postglacial paleoecological history of a cedar swamp, Manitoulin Island, Ontario, Canada, *Palaeogeography, Palaeoclimatology, Palaeoecology*, Vol. 45, p. 301-345.

WINTLE, A.G. and HUNTLEY, D.J. (1982) : Thermoluminescence dating of sediments, *Quaternary Science Reviews*, Vol. 1, p. 31-53.