

The Minori Cave Expedient Lithic Technology

Armand Salvador B. Mijares.

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Armand Salvador Mijares' Master's thesis at the University of New Mexico reflects a "polish" that illuminates into a new "chamber" in Philippine archaeology. His work has produced "striations" in this science that can only be defined as "cutting-edge." I see no better way to describe this book, but in its own terms. Polishes, chambers, striations, cutting-edges, are just some of the terms you come across in a defined archaeological publication of lithic technology. Apparently, Mijares' study is distinguished to be the first book in a series published by the University of the Philippines Press, aptly titled "Contributions to Archaeology". The series, created by the faculty and staff of the UP-Archaeological Studies Program, envisions the publication of recent and cutting-edge archaeological research from all parts of the world (series ed. In Mijares 2003: Preface). They obviously do well in choosing Mijares's work. After all, his is partly a study of "cutting-edges," stone tools, stone flakes, and technology of early man, while using what in Philippine archaeology are recent methods in lithic technology analysis. Mijares's microwear analysis of the stone tools of Minori Cave in Peñablanca, Cagayan Valley, Philippines using high-power magnification is a breath of fresh air for Philippine lithic studies. His work not only has deep time depth, experimentation, and a desire to get into the technological mindset of early man in Cagayan Valley (Series Ed. In Mijares 2003: Preface), but also wields the lever that may elevate Philippine lithic studies to greater scientific discoveries. Typologies in lithics have created brash issues in the cultural debate (See Movius 1948), and while Philippine lithic studies have relied mainly on this as points of reference (See Fox 1970, Henson 1978, Thiel 1976), developments and efforts to effect microwear analysis in Philippine lithic studies (See Thiel 1990, Ronquillo n.d, Cherry 1978, Pawlik 2003, and Mijares 2003) may save the archaeologist from making anymore. I see Mijares's desire

and attempt to “get into the mindset of peoples who used andesite stone tools” as a piece that provides the public – especially the Philippine public where the awareness of archaeology is at its infancy – a view of what the archaeologist does. This is contrary to a popular Filipino notion of archaeologists as Indiana Jones or Tombraider.

The publishing aspect of the book itself is, for me, a disappointment, and a word must be said about the poor quality of photographs. Since the topic at hand is quite technical, a stern comment is left for the publisher with regard to this aspect of publishing. However, it is understandable that finances and funding may have been a constraint and publishing black and white photographs on non-gloss paper, the only recourse. Still, publishing of low clarity photographs is almost unforgivable since most parts of *Minori* are topical and very descriptive. I believe that it is very good practice to include clear and easily understood illustrations and photographs to best describe, document, and reconstruct experiments and technical discourses. So Mijares could have done better by providing more photographs and illustrations, especially in the second chapter where he discusses lithic technological and microwear analysis. Also, I observed the lack of proper and careful documentation with his photographs. He does not, in his Plates section, give the scale of photographs. Instead, in many of the photographs, the degree of magnification is presented. It can therefore not be ascertained whether Mijares did forget to include scale, or intended it this way. Nevertheless, inclusion of a scale in technical drawing and photo-documentation is, as I believe, a very important aspect that should not be forgotten. Let us keep in mind that this is a first in the UP – Archaeological Studies Program’s and UP Press’s Contributions to Archaeology Series. Two of its main objectives are to increase the rate of transmission of knowledge concerning the study of human past, as well as make available the works of active scholars in the field. I believe that there is no better way of doing this but by vivifying the topic at hand with clear and detailed illustrations and photographs. I think this to be true with matters pertaining to scientific and technological research, especially when they pertain to events and phenomena that is either not immediately observed in the contemporary environment, like studies in Particle Physics, and

Molecular Chemistry, or in events long past, like that in Paleoecology and Archaeology.

The Minori Cave Expedient Lithic Technology is organized in such a way that is descriptive, providing a good survey knowledge of lithic technology, microwear analysis, and its traditions in Southeast Asia and the Philippines. It is critical, manifesting a good command of the issues involved in the interpretation of Late Paleolithic to early Neolithic sites within the region, as well as implications brought about by the prevailing technocomplexes and this particular study. The first chapter, the Introduction, raises the controversial issue of the Movius Line (Movius 1948), citing its apparent invalidity in light of current cutting-edge discoveries and researches in lithic studies while attempting to augment these current rebuttals in itself. In the essence of good scientific work, Mijares' research generalizes an apparent "expedient" lithic technology prevalent in the region to explain the said "cultural stagnation" of East and Southeast Asia for thousands of years (Mijares 2003:3). Mijares then cites Pope (1989), Schick and Toth (1994), Nelson (1991), De Vera (1983), Coutts and Wesson (1980), Hutterer (1977), and Reynolds (1993) to corroborate his generalization while explicating two testable hypotheses for this apparent expedient and simple technology. The first involves the abundance of wooden material such as bamboo and rattan, which can be easily manufactured into tools (See Pope 1989); while the second involves the "predominance of coarse-grained raw materials, such as andesite (See Schick and Toth 1994: 278), believed to be difficult to shape into formal tools." Mijares objects in introducing the experimental component of his work that these hypotheses are most likely proper. The relevance of Mijares' research, citing the "elucidation" and "verification" of these earlier proposed hypotheses is, as I believe, moot for the purpose of this series. As I mentioned earlier, it is now on a national and regional scale, a breath of fresh air that wields the lever that will elevate lithic studies in the country and the region to new heights.

The next three chapters of the book are highly descriptive and a beneficial introduction to the experimental methods and data that is presented in the subsequent chapters. Mijares does well in presenting a gamut of

information ranging from the fundamentals of lithics to the cave archaeology of Minori. His style encapsulates a body of knowledge that could otherwise have been presented in a lengthier discussion that would have lulled his readers to sleep. Nevertheless, he is concise, exacting, and quite deft with the choice of his words. Still, in his second chapter, Lithic technological analysis and Microwear analysis, I feel that Mijares could have spent more time and effort in illustrating and explaining the development of lithic studies (i.e. typology, terminology, and history with a lot of illustrations and photographs). This is still remaining faithful to the objectives of the series. Apart from this, I see no reason and relevance for Mijares to dwell on the Newcomer and Unger-Hamilton (1986) “blind test” study and consequent objection to the use of high power microscopy in studying lithic usewear (See page 12 – 13). At this point could Mijares have contented himself with his already excellent defense of the benefits of high power microscopy in Lithic usewear analysis. Abdication of his polemics towards Newcomer and Unger-Hamilton’s (1986) claims could have saved him space for expounding on lithic technology. This, I’m sure, would have been appreciated more by those to which the series intends to reach out.

The third and fourth chapters situate this burgeoning technical discussion on lithics in the region of Southeast Asia, focusing on the Philippines. Mijares’s presentation of dating for significant Paleolithic sites in Mainland Southeast Asia is noteworthy and will prove useful in subsequent discussions in this review. He also presents the other technocomplexes found in Island Southeast Asia, concluding that there is a significant difference between the Mainland and Island lithic assemblages. Critically, he stresses that there is no single reason for the persistence of a simple lithic technology in Southeast Asia as compared to that of its counterpart west of the Movius line. What is sketchy here is the irreconcilable discrepancy between the dating and its further implications on his analysis of the Minori flake tools. It is seen in these chapters that though Mijares presents the technocomplexes of *Tingkuya* (28, 000 – 18, 000 years ago), *Lang Rongrien* (38, 000 – 26, 000 years ago), *Hoabinhian* (18, 000 – 3, 000 years ago) *Sonvian* (23, 000 – 11, 000 years ago), *Bacsonian* (11, 000 B.P) and the *Cabalwanian* (Upper Pleistocene), all except the *Hoabinhian* and

the *Cabalwanian* are dated close to that of the co-related hearth dated from the second cultural layer of the most recent excavation on *Minori*, which is around 4,590 B.P. \pm 50. Mijares points out that significantly Cultural layer II contains both stone tool and ceramic material, while Cultural Layer I is older with only lithic material found in it. Here arises the discrepancy, where I ask: if older, what is the dating for this first cultural layer? Nowhere is the absolute dating of this cultural layer presented in the book, but in an implied relative chronology from what he already has. Consequently, the fifth chapter clamps down on a definitive of recording methods and criteria used in Mijares' work. May it be said that with his initial survey presentation of general lithic studies, the fifth chapter is concise and, as I see it, faithful to the essence of strict scientific experimentation and documentation. Again, the review of these chapters' relevance is dependent on the objectives that the series has set out to achieve.

The last three chapters are the analytical aspects of the book. Remaining faithful to his data, Mijares presents only a factual relation between the data and the analysis. At this point, he does well to flesh out the numerous tables and charts he presents by giving concise and descriptive accounts of what was either taking place, as in the case of the experimentation with manufactured flakes; or took place, as in the case of the curated flakes from *Minori*. Although his data may have been sufficient for him to arrive at a conclusion, especially for the experimental flakes he worked on, Mijares does not give any reason in continuing with 11 experimental andesite flakes and 6 experimental chert flakes. This may seem a small detail to look over. Nevertheless, this may have greatly affected the variable outcomes of the comparison between both worked flakes. In reference to theories of probability, I believe Mijares was consisted with the numbers of andesite and chert flakes, as well as the number of rattan and bamboo on which he worked. All other details within the chapters of analysis however have been synthesized properly in his final chapter of summary and conclusion. Although he successfully supports his earlier hypotheses regarding the use of wooden material and quality and quantity of available raw material in maintaining an expedient lithic technology in Cagayan. I see Mijares overstating his

conclusion outside the parameters of his experiment. In his words, Mijares concludes: "An expedient lithic technology thus persisted in Minori Cave in Northern Luzon (Philippines), as in the rest of the Southeast Asian region." I see this as problematic since I believe Mijares can only exclusively claim conclusive statements for Minori and not for the rest of Southeast Asia until several similar archaeological experiments are done throughout the region's various sites. What is indeed significant and beneficial though to the rest of the archaeology of the region is Mijares' work using high-power magnification to render more accurate lithic studies. What it has proven and laid claim to is an eye-opener for the rest of the region's lithic scholars. I see it as a call to re-excavate sites, as well as re-examine assemblages where coarse-grained material had earlier been dismissed. I see it as a call to vigilance where the archaeologist must strive at meticulous and critical methods lest a "flake" from the past, potentially a cutting-edge discovery, be relegated to "debitage."

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