

symmetrically and perfectly as could be done by the best smith of the present day, with all of the improved aids to his hand. The sockets of these tools, however, are in all instances left open on one side, showing no attempt at welding or brazing.

While acknowledging that the greater portion of these tools were forged from the native metal, several investigators of the subject assert that many of them were cast. Their position is principally based on the observation of certain raised marks upon the tools, which are claimed to be the marks of the joining of molds. The writer believes that the weight of evidence is against the theory of melting and casting. It is probable that the raised marks are due to unequal oxidation, or to incompleteness of fabrication. Had the tools which are made with sockets been cast, it is reasonable to suppose that the sockets would have been cast complete. Without exception the sockets all open on one side; on the sides of the open part lips are turned sufficient for holding the handles. The presence of spots of native silver in the tools, is against the theory of casting. Native silver to a large extent is present with the copper throughout the region, and always as a distinct and separate metal, occurring in macules and strings upon and through the copper. In melting for casting the two metals would form an alloy, and as the proportion of copper would be the greatest, the silver would not be visible. In all of the relics of the mound builders there is no evidence of any vessels that would serve the purposes of crucibles or melting pots. In excavating the mounds, pieces of galena are frequently reported to have been found lying in the immediate vicinity of the copper tools, but there is no record of any lead implements, whatever. When it is considered that the melting point of lead is only 594 degrees Fahrenheit, while that of copper is 2,548 degrees, it would certainly be remarkable if the ancient race had progressed so far in metallurgy as to melt the latter, and had failed to melt and utilize the former. None of the tools are hardened; they are simply pure native copper. Any process of alloying the copper with tin or zinc, for the purpose of hardening, was entirely unknown to the race.

It is an established fact that in the Old World (a gross misno-