Conclusion

The Sanganakallu-Kupgal area is one of the richest and most significant prehistoric localities in India. While archaeological studies have previously been carried out in the area, most were conducted prior to the development of scientific studies in archaeology, and have focused only on very specific localities within a much wider and more diverse landscape of prehistoric remains. Neolithic in the southern Deccan was associated with a number of key economic, social and ritual changes. These included changes in craft production patterns, associated with the gradual emergence of craft specialists in such areas as ceramic and stone axe production.

Sanganakallu-Kupgal area was a major manufacturing centre for axes and other lithic assemblages of the Neolithic period. The raw material needed to manufacture neoliths, the dolerite, occurs in the form of intrusive dyke within the granites in Hiregudda and this made it an ideal lithic production centre. The surrounding hills, Sannarachamma and Choudammagudda are mainly habitation sites. Large number of flakes from various stages of reduction and axe in various stage of production indicates that the site of F1 was a major axe production site where axes were made from slabs as well as sub-angular clast types. HGD Area B, was
also a major manufacturing center, but only one difference was, majority of axe from this site were manufactured axes from sub-angular clast types, whereas, the axes from F1 were manufactured from angular clast types. Lithic analysis at both locales indicates a focus on the extraction of naturally weathered rectangular blocks and slabs of dolerite, probably by digging directly down into subterranean deposits and levering up and wedging out suitably shaped pieces. Another important aspect at this site was from Area J and Area B of Hiregudda was a major axe manufacturing site.

From more detailed technological analyses, revealed that the variability observed in the axe and chisel production was due the use of different types of initial form and clast types at this site, but, all axes found at this site had a similar lateral symmetrical shape which was, only that the length of the axes changes according to phases. Axes from Herigudda and Sannarachamma revealed that in the early phase they are longer, wider, thicker and heavier that the axes found from the later phase irrespective of from which these axes were made i.e., initial form and clast types. The prolific concentration of surface and subsurface dolerite debitage and the scale of the (palimpsest) quarries seem to indicate that an extraordinary level of industrial activity took place at the site.
The earliest evidence for the large-scale 'mass production' of axes at Sanganakallu-Kupgal seems to coincide with the termination of the ashmound phase during the late Neolithic and the first appearance of metal. Dolerite was used for the manufacture of some stone tools during the main ashmound formation phase. (Although at present no petrographic data exists to substantiate the claim, it is presumed that the majority of this dolerite derives from one or more of the quarried outcrops at nearby Hiregudda). Only a single axe specimen testifies to the possible use of Hiregudda dolerite for manufacturing edge-ground axes. None of the other dolerite artefacts can be unambiguously identified as axe manufacturing debris, such as early and late stage bifacial thinning flakes. At the very least we can speculate, based on this data, that one or more of the dolerite outcrops at Hiregudda may have been exploited for the relatively small-scale production of edge-ground axes during the main ashmound expansion phase at Sannarachamma. Throughout the sequence at the nearby Birappa Rock-shelter and in the lowermost levels of Sannarachamma, flaked quartz predominates. Dolerite is very rare to absent in most levels at these sites. At least some of this flaked quartz material (which includes single and multiple platform core reduction, bipolar core reduction and blade core reduction) may be associated with pre-Neolithic hunter-foragers.
Unreduced and retouched pressure micro-blades of chert, chalcedony and quartz crystal are continuous throughout the sequence from the earliest to latest phases of Neolithic habitation.

Thus it would seem from the analysis that the first large-scale manufacture of dolerite axes in the Sanganakallu-Kupgal region post-date the use of the Sannarachamma ashmound. The onset of large-scale axe production relate to the final phases of Neolithic occupation at this site and the from the early phase of the Megalithic. This was the time during which the first traces of metal use at Sanganakallu-Kupgal begin to appear, mostly in the form of small amounts of copper beads, twirled wires and other items of jewellery and decoration. Perhaps the availability of ornamental metals as new items of prestige in south India spurred a major intensification of stone axe production and exchange at Hiregudda centred at discrete quarry workshop locales like Feature 1.