SUMMARY AND CONCLUSION

Intrinsic socio-cultural behaviour interfused in material culture often tends to diffuse over the passage of time. This is an acquired taste process which arise out of culture contact and adaptive mechanism impulsive to eco-techno-cultural factors. Taping of cultural continuity and variation of a given tradition is a conjoined approach needs anthropological as well as archaeological treatment. This approach, as it was felt, is essential to have a cognizance into the process of cultural development in Meghalaya. As such, it was brought under the purview of present study. Data on past socio-cultural system are often preserved in the archaeological record (Binford, 1968;22). These records in the form of lithic artifacts from three representative sites of Meghalaya are brought under this study.

A lithic assemblage is nothing but an archaeological ‘Black-box’ which codified the activities of people we are concerned with. In Meghalaya the process of codification in systematic and in divergent directions started taking place towards the end of Pleistocene. As a result, we witness the emergence of identifiable variation in the cultural patterns within a more or less common time plane.

Decoding proceeds with a number of microanalytical set up based on conventional as well as non-conventional approaches, and it has resulted in the formation of a few sets of analytical tools proved to be more useful in certain fields.
Both man and materials are part of nature, and human culture is a product of interaction between these two. Hence, while studying any one of the components for archaeological purposes, none can be isolated from one another. Understanding culture as man's extra somatic means of adaptation (White 1959:8, Binford, 1972:158) we feel it necessary to put emphasis on ecological setting of the given socio-cultural system. It is the prime causative situation that activates the formation and change of a culture.

The location of the sites under study have their own distinctiveness that led us to think of atleast three prehistoric habitation preferences. Topographically, the people who occupied these sites can be defined as

1. Ridge dwellers
2. Galley dwellers, and
3. Confluence dwellers.

Perhaps, this was the set pattern that prevailed among the cultural groups¹ under study. In this connection it may be mentioned that this is not an isolated phenomenon, rather a general practice shared by other homogenous groups (homogeneity in material culture) distributed in and out of Meghalaya.

Selection of habitat is a traditionally controlled phenomenon originated in the mode of economic practices, availability of natural resources and easy access to the field of subsistence operation. An identifiable traditional habitat reflects the mode of livelihood of primitive groups.

Source variation of a common raw material among the contemporary groups living in a homogenous geographical unit is a culture related phenomenon. This becomes a habit as are seen in the case of Makbil Bisik and Bibra Gre, which

Group I; Ridge dweller : SuwMer (studied site) and Barapani (about 26 km South of SuwMer in East Khasi Hills).

Group II; Galley dwellers : Makbil Bisik (studied Site) and Thebrongiri, Miching grencep, waksambu (within 20 km radius in West Garo Hill).

Group III; Confluence dwellers Bibra Gre (studied site), Nangal Bibra (East Garo Hills) and Parsi Parlo (Arunachal Pradesh).
varies in accordance with the groups' traditional mechanism of subsistence strategy.

Understanding of traditions of prehistoric people lies in the identification of cultural items that constitute the core element\(^1\) (Fig: 1.02: p. 16) in the given material culture. Identification of such elements are important as they regulate the nature of culture formations, under study. They are susceptible to changing situations—biological and cultural environments. Hence, it is often subject to isolation, absorption, alteration and extinction. These consequences can better be understood if one assesses the degree of quantum of core elements preserved in the given sites. For better understanding of variation and continuity of traditions, other related traits\(^2\) and factors\(^3\) are also considered.

The study is based on both qualitative and quantitative analysis. Quantitative analysis consisted of the identification of the constituents of a material and the qualitative analysis, is the determination of the amounts in which the various constituents of a material are present. The qualitative aspect is morphological and takes the form of the setting up of categories of countable units without which there can not be any quantitative analysis (Ragir, 1972: 178). With this background, let us view the work in gist:

Eight major types are identified. Of which seven are typologically attributed to functional types; while the remaining ones as cultural type attributed to type fossil viz. tools of Hoabinhian traditions (includes sumatraliths, short axe and other flaked tools).

The frequency distribution of various characters of the given sites are shown in terms of unit distribution in the ratio of SMR: MBS: BBG. It is deemed that this will give more clarity in respect of proximity and distances between the

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1. Core element in this context is used as relative term which represents the classical Hoabinhian types.
2. Culture traits in this context implies the offshoot of Hoabinhian tradition or hobinbian influenced artifacts.
3. Factor includes technological formation and mode of subsistence.
sites under study. It is standardized in terms of 100 units in each case. The sitewise variations of characters are shown as follows.

<table>
<thead>
<tr>
<th>Characters</th>
<th>Unit distribution</th>
<th>Proximity of Distances</th>
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</thead>
<tbody>
<tr>
<td><strong>1. General Types</strong></td>
<td></td>
<td></td>
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<tr>
<td>(a) scraper</td>
<td>43:39:17</td>
<td></td>
</tr>
<tr>
<td>(b) points</td>
<td>46:39:15</td>
<td>30:46:24</td>
</tr>
<tr>
<td>(c) cutting tools</td>
<td>32:36:32</td>
<td></td>
</tr>
<tr>
<td>(d) digging tools</td>
<td>0:69:39</td>
<td></td>
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<tr>
<td><strong>2. Tools of Hoabinhian Traditions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(a) broad axe</td>
<td>0:29:71</td>
<td></td>
</tr>
<tr>
<td>(b) chipped axe</td>
<td>8:0:92</td>
<td></td>
</tr>
<tr>
<td>(c) chopping axe</td>
<td>0:2:98</td>
<td></td>
</tr>
<tr>
<td>(d) chopping tools</td>
<td>0:33:67</td>
<td></td>
</tr>
<tr>
<td>(e) lanceolate</td>
<td>0:17:83</td>
<td></td>
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<tr>
<td>(f) lanceolate butt</td>
<td>0:100:0</td>
<td>8:28:64</td>
</tr>
<tr>
<td>(g) lanceolate tip</td>
<td>50:50:0</td>
<td></td>
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<tr>
<td>(h) pounder</td>
<td>0:0:100</td>
<td></td>
</tr>
<tr>
<td>(i) pestle</td>
<td>0:0:100</td>
<td></td>
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<tr>
<td>(j) short axe</td>
<td>0:35:65</td>
<td></td>
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<tr>
<td>(k) sumatralith</td>
<td>4:0:96</td>
<td></td>
</tr>
<tr>
<td>(l) waisted tools</td>
<td>29:71:0</td>
<td></td>
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<tr>
<td><strong>3. Patterns of flake scars</strong></td>
<td>29:25:46</td>
<td></td>
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<tr>
<td><strong>4. Patterns of inter factory ridges</strong></td>
<td>30:30:40</td>
<td></td>
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<tr>
<td><strong>5. Mid-ridge, mfs, positive bulb of percussion and striking platform</strong></td>
<td>42:43:15</td>
<td></td>
</tr>
</tbody>
</table>
6. Gripping facility:
(a) TPS 47:40:13
(b) PPS 10:24:16
(c) TPS + PPS 19:39:42 32:40:28
(d) GS (Total) 37:37:26


8. Truncation 17:26:57

9. Cortexed (Partial/complete) 14:14:72

10. Weight
(a) <50 gm 56:35:9
(b) 50 – 300 gm 17:34:48
(c) 301-550 gm 0:20:80 18:35:46 (approx.)
(d) 551 gm + 0:52:48

Preservation of core elements in most conservative state in the material content of BBG has proclaimed it as one of the best known Hoabinhian sites of the region. Its classicism stands on the cobble flake tradition in most archaic form. Blade flake from the blocks of stone dominates the MBS lithic industry and its content clearly exhibits a high degree of core elements of Hoabinhian traditions. On the other hand, SMR has displayed almost a different mode of tradition with highly diffused Hoabinhain traits in it.

Proximity and distances in respect of character distribution among the sites in the ratio of 27:31:42, clearly indicate the distinctiveness of BBG and SMR in both technological and cultural spheres. On the other hand, MBS has maintained a close proximity with SMR in the technological sphere. But at the same time, in the ratio of 8:28:64 of core elements of Hoabinhian traditions, MBS comes more closer to BBG than SMR.

Technometrical options are also utilized to treat the morphologically
tested samples of the given sites. It provides additional support to understanding the variables between the sites. In this process mostly the gripping and halfting part of an implement w.r.t. working edge received due emphasis. This brings forth five functional categories of artifacts:

(a) Cutting and scraping
(b) Digging and dressing
(c) Piercing and boring
(d) Food processing and
(e) Tool making tools.

The quantitative and qualititative aspects of these tools when viewed against their geomorphological and ecological setting provide scope to delineate the trend of economic patterns. Accordingly, three identifiable and sustinient Stone Age economic patterns were operating in Garo Hills and Khasi Hills of Meghalaya within a given range of time limit. The economy of BBG exhibits a different mode than that of SMR and MBS. While the foraging economy of the latter two sites has taken twist in accordance with their cultural contents: MBS pursued Gathering – Hunting while SMR Hunting-Gathering economy.

The piercing and boring category of implements played an important role in the hunting economy. The frequency distribution of this category is quite high (71 unit) in the SMR. In MBS, implements made of organic materials like bamboo played a major functional role in their economy. This inference is drawn on the basis of examples drawn from the contemporary ethnography as well as archaeological context. This is an indirect evidence, but an assertive one at the same time, because of high frequency of dented tools in an uniform pattern in the assemblage of MBS points towards the same. In this connection Ha Van Tan’s observation on Hoabinhian context is worth mentioning: “Although none of these (bamboo and wood) instruments made of vegetable materials has been preserved
to our day, it is almost certain that they played an important role in the life of the men of the epoch” (Ha Van Tan, 1976:132). Nature of dentation and its varied forms further provide information regarding the girth of the prepared object. The ratio of this trait is 5:73:22. The bamboo based or lignic culture is one of the major contributing factors of food gathering economy as suggested by Solheim II (1970).

With 72 units in the frequency distribution of food processing category BBG perhaps entered into a food producing stage. This is supported by the higher frequency of bottom ended tools (72 units) consisting of hand adze type (18.3%) with edge ground trait (5.4% in the assemblage). These features are absent in other two sites.

Distribution of tool making tools (TMT) are equal in SMR and MBS. TMT is absent from BBG, because its technology was based on ‘direct percussion technique’ for shaping the cobble based tools.

Edge angle or angular placement of working edge with relation to grip-axis (GA) provides an idea about the operational procedures of the implements, such as -

(1) The mode of execution of the implements, and
(2) The handedness of the users of the implements

On the basis of above, five modes1, namely BCT (1°-84°); FCT (96°-179°); TET (180°) BET (0°) and PCT (85°-95°) are worked out. This would have been more meaningful had they been viewed against the corresponding weight of the implements. But here only a trend of variation is shown to elicit the importance of the above characters. For example, PCT, which are suitable to be used as skinning

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1. BCT: backward cutting tool
   FCT: forward cutting tool
   TET: top ended tool
   BET: bottom ended tool and
   PCT: parallel cutting tool.
tool or for preparing hides is found at a high frequency (73 units) among the hunter-gatherers. While in an agro based economy like that of BBG the frequency of BET is quite high (72 units). At this stage, it seems to be an assumption, but behind this assumption there remains positive logic; and that may provoke one to undertake further study in this direction.

Handedness is reflected in certain types of implements through the lateral placement of WE. w.r.t. G.A. The ratio of the left handedness in the sites under study is 39:43:18 units i.e. SMR (4.6%); MBS (5.1%) and BBG (2.2%). A Trail-test on the contemporary Garo population of the Garo hills shows a close proximity with that of the BBG with a variation of .2%. The closeness between the two samples separated by a wide span of time. We refrain ourselves to draw any sound conclusion about this phenomenon. To make any conclusive remark on this matter the problem needs to be sieved through its multiple dimension. These are the time gap and the demographic texture that come to the fore at the moment.

The edge grip distance i.e. the shortest distance between the working edge and the grip axis determines the operational mechanism of an implement. The corresponding weight of the implements are also to be reckoned with. On the basis of above two basic types of hand-operating tools are discerned:

1. Contact-cutting tool, (CCT), and
2. Jerk-cutting tool (JCT)

The CCT which restricts to a maximum of 4cm in edge-grip distance is found in higher frequency at SMR and it is followed by MBS. The ratio of CCT is 43:37:20. While the JCT, having a edge-grip distance of more than 4cms is a dominating character of BBG. The ratio of JCT is 9:29:62.

The materials collected provide us a scope to draw some special characteristics of the Meghalayan lithic traditions:
1. Truncation is a typical phenomenon in the lithic traditions of Hoabinhian of Southeast Asia. The same criterion is also applicable to Meghalayan Hoabinhian. The artifacts having such characters are variously defined as short-axe, broad axe, lanceolate tip/butt etc. (plate: BB 4:p.136). Among these types the most common one is short-axe—an artifact modified to form a convex cutting edge at one end. Most of the archaeologists, including Charles Higham (1989:37), are of the opinion that truncation of a tool "reflect either a continuous process of sharpening or the accidental breaking of a Sumatralith". Differences in opinion continue to exist; some archaeologists regards these short-axe as "axe fragment", or axes whose heels have been removed" (Ha Van Tan, 1976:132).

   The shortaxe collected from Meghalaya when viewed against its Southeast Asian counterparts lead us to think somewhat in different directions. To us these are not accidental; nor do they reflect the use duration of the implements. Rather, it is a well intended, predetermined and an ultimate product related to the system of lithic reduction sequences (fig : 8.1:p.293) It is labour effective and skillful — a phenomenon related to 'mental template' of the knapper.

2. Solheim II (1970 :150) opined that edge grinding tool appeared in the Middle Hoabinhian when cultivation of plant and pottery making were not in the picture. They emerged later than the edge ground tools (Ha Van tan, 1976;190) . The development of edge grinding in Hoabinhian took place during early Holocene (Bellwood, 1992:86).

   In Meghalaya, too, the edge-grinding appeared earlier and antedate the production of pottery. BBG lends support to this preposition. Here the edge-grinding tools free from the association of pottery lead to the emergence of incipient agriculture. Here the ecological conditions and the other circumstantial evidences (i.e. natural objects substitute for pottery) might have negated the emergence of pottery.
The edge-grinding is an accidental phenomenon – a natural interactional process that involved the material and the field where the tools were operated. In other words, here the friction was the cause and man was the agent; the emergence of the incipient stage of agriculture was sequence to this process in Meghalaya.

Ecological setting and material evidences are suggestive to infer that agriculture was initiated on the river basins, especially, of seasonal flood plains of the river confluences, rather than hill slopes. This phenomenon existed for a shorter period of time and subsequently was replaced by dry cultivation on the slopes of the hills. The shifting of the mode of agriculture from river basin to the hills slope (wet to dry), was accompanied by the development of varieties of ground and polished stone axes in its later phases.

Foraging is an integral part of the prehistoric subsistence economy. It acts as economic-equilibrium in the varied economic practices of the groups under study. Foraging is unavoidable as uncertainty always looms over the groups who shifted to or experimented with a relatively new mode of subsistence economy. In the given situation, as that of Bibra Gre, foraging certainly played a significant role and perhaps this is one of the reason as to why it was common to among all the groups under study. Its variation and continuity, however, depends on the degree of management of the adaptive mechanism. It is a culture related phenomenon discernable to technology under the given physical setting of the sites.

Though segmented into independent economic and cultural groups, they constitute distinct sub-group by themselves under the canopy of broad spectrum Hoabinhian traditions and subsequently these segmented groups as a whole represent the colonization of the wet Holocene hilly rainforests of Garo Hills.
These groups were more inclined towards gathering than hunting\(^1\) and some others even experimented with cultivation of plants. On the other hand in Meghalaya another distinctive hunting community persisted in Khasi Hills within the contemporary time plane. This group is in no way related to the groups of Garo Hills, except a marginal cultural contact. Technically their culture is essentially an early Holocene one but its strong generic relationship with that of the late Pleistocene blade industries of island Southeast Asia is also undeniable. The distinctiveness of the material culture of this group in almost all the spheres prompts us to isolate the group from the other homogenous groups. Under the given circumstances it is difficult to reconstruct the linguistic and ethnic composition of the groups under study, nay there is any relevance to a comparative cultural observations of the people present and past. However, so far as the Khasi Hills of Meghalaya is concerned, the situation is slightly different, and what we feel that it is relevant to mention in this context: the present day Khasis are the only representative group of the Austroasiatic linguistic family of the whole of Northeast and this provides logical basis for correlation between the present and past peoples of Khasi Hills, atleast till the identification of any other prehistoric group in this regard.

The Mesolithic people of Garo Hills heavily relied on bamboo and it played a major role in their economy. On the other hand, the Khasi Hills hunter group was more dependent on their lithic implements.

In Meghalaya, the prehistory of Holocene is more clear with more variables than its preceding phases. This is because of the development of localized blade technologies and the elements of microliths in addition to varieties of traditional tools (index-fossils). Cobble flaked sumatralith types constitute the principal group of implements in Bibra Gre. Of which the hand adze or ‘hoe-like’

\(^1\) For ethnographic record see the observation of A. Playfair (1909) at page: 67.
tools are essentially agro-based, suitable in the given context for ‘working soil’, as suggested (based on microscopic examination) by Hoang Xuan Chinh (1984:169-72) in the context of Xom Trai site of Viet Nam.

Non availability of datable associated materials deter us from putting forward any time limit in absolute terms. This is due to sub-tropical conditions where excessive rainfall and extreme humidity prevent preservation or organic materials. However, any attempt in this regard, caution should be taken, because the sites under study have, like so many others, suffered disturbance in their upper levels owing to burning of jungles for Jhuming.

The broad-spectrum traditions of post Pleistocene cultures of Southeast Asia have a close affinity with that of Meghalaya. The undettractable geo-cultural homogeneity and close sequential continua of material cultures between the twos clearly indicates an intimate relationship beyond their respective territories. The cultural processes of either Southeast Asia or Meghalaya, if studied as separate entities without proper reference to each other, a comprehensive picture of the wide cultural zone does not emerge out. Infact, the Southeast Asia and its beyond i.e. North East India, form a common cultural zone. So, it is reasonable to suggest for a relative chronological framwork for the traditions under study. The bases for this connotation are the cultural elements, which has already attained a definite status with regard to their chronological entities. Such elements have already been identified and discussed in the foregoing pages. On that basis, it may be said that the Mesolithic hunters subjugating their nomadic way of life in the higher altitudes of Eastern Meghalaya during Early Holoence. And by around 7th to 8th millennium B.C., the western part of Meghalaya was colonized by the people of Hoabinhian traditions.

The data from the present study lead us to present a chronocultural pattern and development for the sites in the following manner:
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<thead>
<tr>
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<tbody>
<tr>
<td>2) Tentative ethnic/linguistic affiliation of the occupants:</td>
<td>Austroasiatic: under Astro-mongoloid hybridization process.</td>
<td>Southern Mongoloid</td>
<td>Southern Mongoloid</td>
</tr>
<tr>
<td>3) Initiation of the cultural process:</td>
<td>Late pleistocene/Early Holocene</td>
<td>Early Holocene</td>
<td>Early Holocene</td>
</tr>
<tr>
<td>4) Physical Setting of the habitat:</td>
<td>Ridge dweller</td>
<td>Gully dweller</td>
<td>Confluence dweller</td>
</tr>
<tr>
<td>5) Technological pursuits:</td>
<td>Block of stone: blade/prepared core/microlithic</td>
<td>Block of stone: (blade flake &amp; percussion)</td>
<td>Cobble flake: percussion</td>
</tr>
<tr>
<td>6) Common economic practice:</td>
<td>Foraging</td>
<td>Foraging</td>
<td>Foraging</td>
</tr>
<tr>
<td>7) Principal economy:</td>
<td>Hunting</td>
<td>Gathering</td>
<td>Cultivation of plant</td>
</tr>
<tr>
<td>8) supporting economy:</td>
<td>Gathering</td>
<td>Hunting &amp; fishing</td>
<td>Gathering &amp; fishing</td>
</tr>
<tr>
<td>9) Economic status:</td>
<td>The Hunter</td>
<td>The Gatherer</td>
<td>The food producer</td>
</tr>
<tr>
<td>10) Technological status (culture):</td>
<td>Bow &amp; arrow culture</td>
<td>Bamboo culture</td>
<td>Hand adze culture</td>
</tr>
<tr>
<td>11) The identifiable cultures of Meghalaya: applicable in general to all the Mesolithic groups:</td>
<td>The Sawmerian culture: indicating the hunters-the hunting-gathering group of people.</td>
<td>Makbil culture: indicating the bamboo culture related to gathering-hunting-fishing group of people</td>
<td>The Bibra culture: indicating the hand adze culture related to the productive economic group of people.</td>
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</tbody>
</table>