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Human Skeletal Biology in India: Past, Present and Future*

Subhash Walimbe

Former Faculty, Department of A.I.H.C. and Archaeology,
Deccan College Post Graduate and Research Institute (Deemed to be University), Pune 411006
E-mail: subhashwalimbe@gmail.com

Senior Professors, colleagues, students, and all respected delegates,

I thank you all for being here. The last couple of years were very hard for all of us. I hope you are in good health and spirits. COVID-19 taught us many things but probably also thickened our bonds with each other. Still, the danger is not completely over. But I hope we will all completely recover from the physiological and psychological trauma soon.

I thank the Indian Society for Prehistoric and Quaternary Studies for giving me opportunity to share my thoughts at the annual meeting of the Professor H.D. Sankalia Memorial Lecture. I was not fortunate enough to interact directly with this great scholar who was mentor to many of my colleagues present here. But the academic tradition he cultivated at Deccan College helped me immensely. Whatever little I could contribute in my area is only because of my long association with this institute. My being here is a great honour and a token of appreciation for the little work I could do on the subject over the last 40 years. I also take this honour as a recognition of the subject of human skeletal biology in the archaeology domain. Actually, this is not the first time our subject has been accorded this honour. I remember that in the Lucknow session of ISPQS, held in 2004, Prof. Kenneth Kennedy was invited. So, thank you once again.

I joined the archaeology club in 1980. Today, ISPQS gave me this opportunity to retrospect the development of the subject during the last four decades - where are we now? - and, also, I have taken the liberty to share my vision of the subject in the future. This review focuses primarily on the processual and post-processual eras of contemporary scholarship. While doing so, I may have to discuss those earlier works and approaches. Please understand that I do not mean to criticise their contribution. I appreciate that recent methodological approaches, analytical techniques, and interpretive frameworks rest necessarily on a solid foundation laid by generations of eminent scholars. So, I urge you to take my comments on my predecessors in the right spirit.

I. Change in Research Approach

The most important change I notice in the subject is the modification of the research goals. Prior to 1980, the majority of human skeletal biology research was aimed at addressing research questions directly resulting from anthropology's colonialist and *racist* origins in South Asia. Anthropologists sought to establish the *racial* identities of past populations and to use the data to infer population movements, trace the origin of cultural diversity, or establish the historicity of, and the relationships within the caste structure. The Census of India report of 1931 established the model for how the native populations of British India should be classified (Risley 1908; Guha 1931). And thereon, anthropology was preoccupied with describing and explaining this morphological, genetic, cultural and linguistic diversity. And, once the diversity was codified, efforts began to explain all of this heterogeneity. Predictably, some scholars argued it was indigenous, while other scholars attributed a considerable fraction of this variability to large-scale immigration events in India's history. Consequently, during the pre-1980 era, the vast majority of anthropological literature concerned the validity of different hypotheses about *'ethnic'* or *'racial'* identity of South Asian populations.

Archaeological explanations of culture change, innovation, and diffusion contributed to this emphasis on typological research in India. The protohistoric phase is characterised by innovation, invention, and new lifestyles. Migration was invoked to explain the high degree of socio-cultural change. Waves of 'foreigners' were given credit for any new material artefact or trend seen in the archaeological record; local developments were almost never considered. At times, 'foreign invaders' were held responsible for the 'collapse' or extinction of a culture. *Racial* science was used to measure similarities among archaeological populations from different regions, and these results invariably emphasised cultural contact to explain changes in the material culture (see, for example, Sewell and Guha 1931; Guha and Basu 1938; Sarkar 1972). Despite the serious efforts of UNESCO way back in 1951 to re-evaluate the concept of *race* and suppress *racism* (UNESCO 1952), identification of '*racial* types' continued to be the focus of attention of anthropological

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research for at least three decades thereafter in India. The first (rather the only) expectation from people like us was to label the skeletal population *'racially'*. We were just not expected to talk about anything else. Yes, there were just a handful of personalities who were more interested in knowing *how* our protohistoric ancestors lived than *who* these people were. They helped us survive!

The most malignant and far-reaching example of the pre-1980 obsession with this *racist* pursuit is, of course, found in the literature on 'Aryan invasion'. The issue is not only a subject of academic interest; rather, it informs intellectual and popular, religious and secular discourse, and conditions South Asians' perceptions of our history and identity. Above all others, this academic theory has transcended scholarly discourse to have a strong bearing on the contemporary Indian political and social landscape. The skeletal biological research in the pre-1980s era complemented the Aryan Invasion Theory (AIT) and then participated in overturning it in the post-1980s era (Sewell and Guha 1931; Gupta *et al*. 1962; Walimbe 1993, 2011).

At the global level, following the end of the Second World War, western anthropologists gradually started questioning the traditional concepts of *racial* typology. Human biological variations were gradually taken as the net result of a highly complex interaction among genetic and non-genetic factors, including cultural and biological acclimatisation, adjustment, and adaptation. The typological approach was inadequate to address questions about human variation because it was purely descriptive and preoccupied with *racial* classification. A 'bio-cultural perspective' arose in the 1980s in anthropology, which enabled researchers to think about human biology and culture as inexorably intertwined and about human populations as participating in an interaction with their environment. In this framework, socio-cultural conditions served as a context for understanding adaptive, developmental, and environmental effects on human skeletons in past populations. By integrating anthropological and archaeological data, skeletal evidence is now used in this kind of processual approach to understand the *why*, *where*, *when* and *how* of changes in ancient lifeways in South Asia.

With this change in perspective came a change in the excavation and curation of human skeletal material in India. Previously, palaeoanthropological research was focused on finding, studying, and preserving complete adult crania, the primary objective being only to draw conclusions regarding the possible *'ethnic'* identity of the population, address questions about ancient migrations, and support the idea that socio-cultural features spread by diffusion. Post-cranial bones were usually discarded, as were the infant and sub-adult bones, as these elements do not possess *racially* diagnostic features. Today, research questions concerning immature remains and childhood in the past form an important part of research. Immature remains comprise a significant portion of the archaeological human skeletal series in the Indian subcontinent. The presence of sub-adults in large numbers may to some extent be attributed to the differential preservation in burial urns, which provided a protective cover for delicate bones against the pressure of surrounding soil sediments. The finding of sub-adults belonging to a well-knit temporal, cultural, and regional zone proved to be a definite advantage to biocultural studies in India. Children are sensitive to adverse genetic, nutritional, epidemiological, environmental factors, and metabolic upsets. Their death at a young age means they had less time to recover and for bones to remodel the evidence of developmental stressors. Rural Southern Neolithic and Deccan Chalcolithic cultures, without much trade activity or cultural contact (and therefore leaving little scope for the operation of external biocultural influences), provided a sort of 'controlled' laboratory situation to assess the biocultural adaptive strategies of ancient pastoral groups in response to changing ecosystems. Our bioanthropological study on the Inamgaon skeletal series proved to be a trend-setter (Lukacs and Walimbe 1986). Thereafter, research on children and childhood became an important aspect of work in Indian skeletal biology. With the building effort to understand human variation in an evolutionary framework and to apply a biocultural perspective, new emphasis was put on preserving and studying postcranial, immature, and even fragmentary bones.

II. Metric and Morphological Data: Trends of Microevolution and Concepts of Peopling of the Region

Craniometric features were more meticulously and completely reported in pre-1980 skeletal biology publications, but they were used only for inferring population distances. The dimensions or indices most commonly used include the cranial index, facial index, nasal index and facial-nasal perspective in profile. In the post-1980 phase too, the 'continuous' craniometric data was generated but not used for taxonomic purposes but, more importantly, for understanding human bio-cultural evolutionary history. The protohistoric period in the sub-continent covers a broad temporal and geographic span and is well supported by archaeological evidence. It is a period of major cultural innovations, the most important of which is the domestication of plants and animals, enabling changes in settlement patterns and technological innovations. In the post-1980 phase, we tried to understand the microevolutionary changes in cranio-facial morphology during the agricultural transition. Our research clearly shows significant changes in the cranial features of the pre-agricultural and early agro-pastoral populations. There is a gradual reduction in robusticity, and there are significant changes in skull shape. There is a decrease in cranial length (but not a significant increase in cranial breadth), an increase in cranial height and a rotation of the facial

region to a position more inferior to the cranium (changing the facial profile from prognathus to more or more orthognathus-straight) (Walimbe 2007, 2022).

The question we tried to address is whether the metric differences in the two groups reflect new or modified genetic composition or reflect the trends of micro-evolutionary processes operative during the agricultural transition.

The role of genetic makeup in determining the phenotype of a population cannot be denied. Yet, alternative non-genetic explanations can also be offered for the population differences as being due to mechanisms of adaptation, primarily due to subsistence changes. The differential functional demands on the body in early farming societies (inclusive of more sophisticated food preparation techniques) could be the main factor influencing changes in cranio-facial morphology.

Robust body size and larger dentition in individuals are interpreted as successful biological adaptations in Mesolithic populations, essential for the exploitation of new ecological settings and a hunting-gathering way of life associated with the consumption of coarse-fibre food. The overall gracile appearance of the later population, in comparison with their hunting-gathering predecessors, can mainly be attributed to two factors: decreased mechanical stress, and increased nutritional stress. In addition, it may be stated that higher morbidity levels in settled early agro-pastoral populations, which affected the growth rate and metabolism in general, appear to be yet another contributory factor for their delicate body structure.

As stated earlier in the pre-1980 phase, skeletal biological research was primarily confined to metric analysis, and only gross morphological features were considered. In the post-1980 phase, cranial and dental morphology were more thoughtfully studied. This change gave valuable insights while studying population movements during the protohistoric period (Walimbe 2007, 2016). Morphological traits with little to no sexual dimorphism, low susceptibility to environmental change, and a lack of age-related morphological changes have been given increased attention in recent years in Indian anthropology. In comparison with the continuous traits, non-metric cranial discrete traits and dental occlusal morphological features appear to be more important and relevant for understanding population distances and thereby inferring past population relationships and movements. Dental morphological features are particularly important since they remain unchanged during the development process. The protohistoric skeletal series, especially in the Neolithic-Chalcolithic of India, is characterised by the over-representation of sub-adults, accounting for almost 70% of the collection. This population segment is of little use for calculating population distances using the conventional metric approach. Earlier bio-anthropological research, therefore, as stated earlier, focused only on complete adult crania, discarding infant, sub-adult and fragmentary bones. With the changed research perspective, inclusion of immature and fragmentary bones and loose teeth in the study sample became possible, thereby radically increasing the sample size and justifying 'pooling' of the male and female samples.

The most dramatic inference that came out of studies on discrete morphological features confirms that the Indus and the Deccan farming/herding communities share similarities with Indian Mesolithic hunter-gatherers, reflecting a common origin for the protohistoric communities. In other words, this inference implies genetic continuity in the sub-continent for at least the last 15,000 years or so, suggesting an indigenous and common origin for the people of the Indus and the early Deccan agro-pastoral communities. The dental morphological data further indicates that there is little evidence to support an external origin for the Iron Age/Megalithic populations (Hawkey 2002).

It must be noted here, however, that when attempting to hypothesise about population dispersals and migrations, the limitations of the archaeological and anthropological data are obvious. Archaeological inferences are based on the currently available evidence. More importantly, concepts and theories change as new discoveries are made. The traditional methods of biological anthropology, including those employed in skeletal analysis, are inadequate to trace human phylogenetic history and evolutionary change beyond a few generations. Therefore, additional skeletal and archaeological evidence, in conjunction with linguistic data and other biological tools (e.g., mitochondrial DNA and Y-chromosome DNA), is required to explain plausible scenarios in the process of the peopling of the subcontinent.

Genetic data for extinct and extant populations has been generated in recent years. Largely, the results corroborate the physical anthropological inferences, concluding that there is no material evidence for any large-scale migrations into India over the period of 4500 to 800 BCE, but frequent small-scale migrations were probable.

Molecular biology is not my area of research. But I must say, I am deeply concerned about the threat that emanates from these new research tools available to us. We cannot and should not stop the development of science, but we must realise and be prepared for the possible social pollution that might emerge.

For several studies on contemporary populations, there remain serious issues about the sampling procedures. Anthropologically, it sounds worthless to compare 'Bengali' and 'Maharashtrian' or 'north' Indian and 'south' Indian populations, for example. Population comparisons would be more meaningful only if the sample represented a 'Mendelian' group. This is extremely relevant in the Indian scenario, where endogamy was more or less rigidly followed until very recently.

Moreover, the genetic data can only speak about the migration of people and not the culture or language of the dispersing populations. The conjectures about language migrations can be substantiated only by linguistic evidence, texts and archaeological data. If language transmission takes place through contact and the spread of farming (not the spread of the farmers), then it will leave little signature in the genetic record. Similarly, if a small group of migrants become the dominant elite through military conquest or economic supremacy, they can impose their language on the general population, again without a significant sign in the genetic record. In this view, the hypotheses on *'Ancestral North Indians'* and *'Ancestral South Indians'* or the hypothesis of *'racial purity'* among Indians, need to be seriously debated. My good friend and collaborator, (late) Prof. Lalji Singh, used to say "DNA won't lie". I totally agree, but we need to revaluate our archaeological data and reframe our theories in view of the new data available to us. Moreover, any conclusion in this regard will remain speculative (at least partially) unless supported by high-quality ancient DNA data from Indian protohistoric populations, and unfortunately, the chances are still quite dim. Of course, getting negative results is also a good contribution to the subject. That will help refine our lab's analytical protocol. The article published in 2000, which I co-authored, was titled "Discouraging prospects for ancient DNA in India" (Kumar *et al.* 2000). Even after almost 25 years, conditions have not changed much; there have been no unambiguous success so far. Success of the Rakhgarhi and Roopkund samples, are exceptions.

III. Palaeopathology

Another major development in post-1980 Indian human skeletal biology is the research in palaeopathology. The pattern of disease or injury that affects any group of people is never a matter of chance. It is not only the expression of stresses to which they were exposed but also reflects their genetic inheritance, the climate in which they lived, the soil that gave them sustenance, and the animals or plants around them. Their daily occupation, dietary habits, choice of dwellings and clothes, social structure, and even their customs influence their morbidity pattern. The stress experienced by the bygone populations can be judged by carefully examining the morphological changes in skeletal and dental remains. In a way, we study the evolution and progress of disease over long periods of time. Combining biological and cultural data, we try to examine how humans adapt to change in their environment.

Before 1980, reporting on the palaeopathological aspects largely remained limited to gross lesions like dental caries, ante-mortem tooth loss, or obvious fractures, and the interpretive angle was almost lacking. In fact, the subject of palaeopathology commands optimum research potential in Indian anthropology. Indian archaeological sites provide a wide spectrum of human skeletal records of the last ten thousand years or so of populations experiencing the major Cultural Revolution, viz. the change from nomadic hunting-gathering to settled agro-pastoral life styles. Sedentism and the subsequent adoption of agriculture presumably had adverse effects on health. The early farming Neolithic-Chalcolithic communities who could not improve food production beyond a certain level to meet the demands of the increasing population pressure experienced nutritional stress, both qualitatively and quantitatively. Nutrition and disease are integrally and synergistically related to one another. Thus, a low-quality diet and an increased population density contributed to the deterioration of the health of early farming communities. Moreover, hunter-gatherers moved about more often and, hence, could hardly be prone to epidemics. Infection of disease was thus not high, whereas in a more settled lifestyle with high population densities, incidences of infection may have a greater chance of spreading, and if host resistance is low, the chance of survival is not great. Also, the domestication of animals might have introduced new pathogens into pastoral populations.

A number of techniques and perspectives have emerged during the last two decades to help skeletal biologists test propositions and hypotheses about the relative quality of hunter-gatherer's and farmer's health and nutrition, more specifically, the effects of an increase in population densities and the less nutritious diet of the farmers as compared to that of the hunter-gatherers. The important pathologies that are observed in the Indian sample include evidence of congenetic (present at birth) and acquired (developed during life) diseases. Lesions of general or cumulative stress, specific or non-specific infection, trauma, age-related degenerative problems, nutritional deficiencies, a series of dental problems, etc. can be diagnosed.

A detailed osteological study demands a multidisciplinary approach and seeks help from other physical sciences. Today, scholars in my discipline are going in this direction. Advanced macroscopic and microscopic analysis (SEM) of the bone has contributed a lot to the understanding of lesions and the complexity of human adaptation. Radiographs and photographs of bones are non-destructive ways of analysing bones. Chemical analysis of dry bone has provided new insights into the dynamics of bone tissue in health, disease and nutrition. Trace element and isotopic analysis have contributed to a better understanding of skeletal pathologies not visible by gross analysis. The most investigated and studied has been the Strontium-Calcium ratio, which highlights cereal versus meat intake by humans. The Sr/Ca ratio has also supplied information on the pattern of dietary supplementation and age of weaning in infants. A change in the weaning age is said to indicate a shift in the subsistence base and is also important to project

estimates for population growth rate (Pomeroy *et al.* 2018, 2019a, 2019b; Robbins 2011, Robbins and Blevins 2016; Valentine *et al.* 2015; Wells *et al.* 2016).

It would be extremely interesting to see the correlation between protohistoric morbidity and the development of medical science in India. Medical texts were being conceived and *'written'* during this period. The medicinal history of India goes back to the ancient tradition of the Vedas, which can be positively dated to 1500 BCE. Probably, the practice of medicine had not yet developed into an independent profession; it was a part of the functions of the priest-physician, and basically magico-religious in character. For example, in the Atharvaveda (1200 BCE), sometimes diseases are attributed to supernatural powers. The tradition continues further as in *Taitreya Samhita* (1000 BCE), Panini's *Ashtadhyayi* (500 BCE), and *Bhela Samhita* (200 CE). *Charaka Samhita* (200 CE) is a huge exposition on ancient Indian medicine and also describes not only the existing knowledge about aspects of medicine but also the logic and philosophy behind the medical systems. *Sushruta Samhita* is the most authentic text on the practice of Ayurvedic surgery, containing a description of 1120 illnesses and the related treatment and surgical procedures involved. The compilation of *Charaka* and *Shuruta*, *Bhela*, and other texts resulted in a well-defined indigenous medicinal branch called Ayurveda (*ayur*- longevity, *veda*- knowledge), which continues to grow. Medical research is never done for the sake of research; it is always need-based and requires a patient to test the effectiveness of a drug. I am sure that the increasing morbidity and stress experienced by the protohistoric and early historic populations gave major impetus to the development of medical research. I therefore believe that the palaeopathological lesions seen in the human skeletal specimens can potentially be corroborated with textual information.

IV. Human Skeletal Biology in India: Administrative and Procedural Lapses

The fossil record to trace the evolutionary routes of *Homo sapiens* is scanty, yet the Indian subcontinent provides an excellent spectrum of human skeletal evidence, representing a wide temporal span of the last 10,000 years or so. However, research on archaeological human skeletal remains was negligible in India until the 1980s. Prior to that, discoveries of human skeletons figured merely as appendices to excavation reports. Though more attention is being paid now to this category of archaeological evidence, the branch is not accorded a prominent position in Indian archaeology as it is elsewhere in the world. Recently, we did some homework (Mushrif *et al.* 2016). As per the official journals of the Archaeological Survey of India (*Ancient India* and *Indian Archaeology Review*), since 1944, excavations at more than 150 sites have given evidence of human burials. This figure includes site reports that have unambiguously stated human skeletons were recovered and lifted, even if their current location is unknown. There are several site reports that mention the recovery of burned bones and fragments, but the remains were apparently discarded at the site itself. For important sites located in Pakistan or bordering Afghanistan that were excavated before independence, the human skeletons are often stored in India. Sadly, despite India's vast collection of skeletal material, with individuals numbering in the thousands, full or partial anthropological reports are available for only about 40 skeletal series. Skeletons recovered from other sites still await careful anthropological attention or are lost forever.

The reasons for overlooking human skeletal evidence are many. The general lack of awareness on the part of many excavators regarding the research potential of the data was, and continues to be, one of the major reasons for the slow progress of the discipline in India. While archaeological evidence of burial is always sought, since physical anthropologists are very rarely involved in actual excavations, no adequate post-excavation care is rendered to the bones themselves. In many cases, fragmentary bones are overlooked or not meticulously collected in the field. Many excavators never bother to have their collections studied by experts in skeletal biology. Furthermore, research orientations in the subject of anthropology itself are also largely responsible for this unfortunate situation. The principal research focus and training facilities in physical anthropology in India have remained primarily confined to analyses and comparisons of bodily features (like somatoscopy, somatometry, serology, dermatoglyphics, etc.) of present-day populations. Attention at some research institutions is shifting towards growth and development and genetics, but sadly, archaeological anthropology is perhaps the least attended discipline in the anthropology domain in India, and, for all practical purposes, the definition of 'archaeological anthropology' starts and ends with fossils and tools. As of today, no university anthropology department in India offers adequate training in human skeletal biology, despite the fact that related topics are very much an integral part of the curriculum in most academic programmes. Lack of training facilities, lack of laboratory and library facilities, and, more importantly, lack of job opportunities in this branch probably resulted in restricting the discipline to just a few South Asian and foreign scholars, who find it impossible to examine the vast collection of human skeletons available in India.

As a concluding statement, I may state that the subject of human skeletal biology has very high research potential in India. Human skeletal studies in India have experienced a transition from a descriptive to an interpretive phase. It has come a long way from the classification of the fossils of 'ancient man' and grouping them into 'ethnic classes'

to studying the skeletal record as an entity in itself, which has a wide scope for providing answers regarding the continuous biocultural adaptation of ancient populations of the subcontinent. Yet there is a long way to go. Serious national-level efforts are necessary to overcome serious administrative lapses.

Some of the skeletal collections have been studied by the scholars of the Anthropological Survey of India in the 1960s and 1970s, and the reports of this research are still highly acclaimed. However, considering the new developments in the field of skeletal biology and the current research trends that prevail in this field, it is highly recommended that a fresh scrutiny of these collections be done.

Storage conditions in many repositories are far below the desired standard. Excavations in India conducted before 1980 probably took human bones too casually, causing inadequate field and post-excavation treatment and poor to extremely poor storage facilities for bones. There are cases where human bones are 'stored' in gunny-bags! Prof. Kenneth Kennedy comments, "One element of lack of infrastructure and appointments of well-trained future personnel is a sense of individual ownership of archaeological and osteological specimens recovered during the periods of one's active field research. …. Proper curation of specimens suffers as a consequence of this mindset as storage facilities (*after their transfer or retirement*) are not maintained for security and temperature control, and their availability and sound preservation for future investigators is compromised" (Kennedy 2003). I am a bit hesitant, but I must add two quotes in support of the statements made. One very senior Indian anthropologist writes, "I have felt that archaeologists of this country are not yet so interested in skeletal remains as they are with potsherds. I tried to ascertain in certain cases as to what happened with the excavated skeletal remains, their whereabouts, or the completion of their reports, but I failed to obtain a scientific answer from any quarter" (Sarkar 1972). The second statement is made by none other than Prof. Kennedy, whose footsteps we are following. He says, "the osteological company is not always welcome at the archaeological banquet. Some excavators have left the burials unexhumed; others packed them off to a museum or other institution, where they linger unexamined for decades; and not infrequently the excavated skeletons were lost, purposefully destroyed, or reburied without scientific study" (Kennedy 2003). In the current scenario, the skeletal evidence is neglected even in cemetery excavations and, more seriously, TREATED UNETHICALLY in the field. Skeletons are kept in exposed condition not for weeks but for months! They are often taken to have an 'ornamental value' to the excavation site. There have been several examples in the last few years where only the 'important' parts of the skeleton are lifted, leaving the remaining skeleton unattended. In the last 4 years, I know of at least ten cases where a complete temporal bone was picked up (without undertaking any field analysis), as the petrous portion is presumably a good choice for a specific high-tech laboratory analysis. This is rubbish, unethical, and should be condemned, and such practices should be seriously avoided.

Therefore, the situation demands a more intimate interaction between archaeologists and skeletal biologists. It is high time to see that the osseous remains are collected with great care; not only should adult crania be recorded and collected, but every post-cranial and sub-adult or infant bone, fragmentary or complete, should be attended to. There needs to be better coordination of the activities of the two major organisations, Archaeological Survey of India (ASI) and the Anthropological Survey of India (AnSI). As of now, physical anthropologists rarely participate in excavations. It should be made mandatory for the excavating agency to seek the help of a physical anthropologist while exposing a human burial. Since not many trained skeletal biologists are available in the country for this purpose, the ASI and/or AnSI should organise training-workshops for archaeologists. The training should include field methodological protocols pertaining to excavation, field-recording, packing, and transportation of human bones to qualified scientists. Guidelines for post-mortem treatment of excavated human bones should be printed, and the handbooks or even e-books should be made available to all excavating agencies. Ideally, there should be a central repository of human remains excavated and, very importantly, an institutionally controlled (and not in individual custody) sample cold-room storage facility for potential ancient DNA and other scientific analysis in the future. The sample should be carefully collected at the site itself, stored neatly and properly indexed. This will avoid the dangers of damage and contamination and provide a genuine sample for laboratory analysis even decades later.

Besides the initiative expected from the two main government organisations, ASI and AnSI, better interaction in university anthropology and archaeology departments will help the discipline immensely. At the moment, it is virtually nil or just marginal. I can quote my own example. I did not get any exposure to archaeology during my post-graduate training, though at that time the Pune University Anthropology department was housed in Deccan College campus itself, and the departmental laboratory was very much in the archaeology building! We were regularly taken to tribal areas for anthropology fieldwork training but never had a chance to participate in archaeological excavations. I had never imagined any career in archaeology at that time, never thought of subjects like human skeletal biology or ethnoarchaeology ever existed in archaeology.

At one point in time, the skeletal biological reports were constituted as a mere appendix to the archaeological reports. Skeletal remains are now looked at not as isolated

pieces of evidence, but by placing the skeletal material into an assigned cultural context, anthropologists are successful in tracing the evolutionary routes of the human form over time and also in establishing the movement of populations from different areas with improvements in technology. The Indian skeletal record, covers a vast time span, and can be used to carry out meaningful research and help understand the interaction between ancient populations and their habitats, more specifically the shift from a hunting-gathering lifestyle to a settled way of life.

I once again thank the ISPQS for giving me this opportunity to share my thoughts. And thank you all for your patience.

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