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Concluding Remarks: What's in a Name? "Negritos" in the Context of the Human Prehistory of Southeast Asia

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Abstract

The "negrito" hypothesis posits that various indigenous groups throughout Island and Mainland Southeast Asia have a shared phenotype due to common descent from a putative ancestral population, representing a preagricultural substrate of humanity in the region. This has been examined and tested many times in the past, with no clear resolution. With many new resources to hand, the articles in this volume reexamine this hypothesis in a range of different ways. The evidence presented in this double issue of Human Biology speaks more against the category of "negrito" than for it. While populations with the negrito phenotype form a small proportion of all contemporary populations in this region, they have remained a persistent presence. And without a fascination about their origins, there would not be such a depth of knowledge about the human biology of this region more broadly as there is now.

Keywords

Negrito, Southeast Asia, Phenotype, Genetic Variation, Taxonomy, Hunter-Gatherers

Concluding Remarks

What's in a Name? "Negritos" in the Context of the Human Prehistory of Southeast Asia

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Abstract The "negrito" hypothesis posits that various indigenous groups throughout Island and Mainland Southeast Asia have a shared phenotype due to common descent from a putative ancestral population, representing a preagricultural substrate of humanity in the region. This has been examined and tested many times in the past, with no clear resolution. With many new resources to hand, the articles in this volume reexamine this hypothesis in a range of different ways. The evidence presented in this double issue of *Human Biology* speaks more against the category of "negrito" than for it. While populations with the negrito phenotype form a small proportion of all contemporary populations in this region, they have remained a persistent presence. And without a fascination about their origins, there would not be such a depth of knowledge about the human biology of this region more broadly as there is now.

The term *negrito* was put forward by de Quatrefages (1887) as a combined name for the human populations that differed from the broader local norms when first observed by Europeans during the colonial quest in the Andamen Islands, Malay Peninsula, Papua New Guinea, and the Philippines. Their common characteristics were that they were all particularly short statured and dark-skinned. The negrito hypothesis that attempted to place them within taxonomic schemes of humanity is one of the first evolutionary paradigms that emerged in the late nineteenth century, positing that various indigenous groups throughout Island and Mainland Southeast Asia have a shared phenotype due to common descent from a putative ancestral population, representing a preagricultural substrate of humanity in the region. This has been examined and tested many times in the past, with no clear resolution. Can the issue be resolved in 2013? Much more is known now about

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KEYWORDS: NEGRITO, SOUTHEAST ASIA, PHENOTYPE, GENETIC VARIATION, TAXONOMY, HUNTER-GATHERERS.

the origins of humanity and the peopling of the world. There are also more and better methods with which to study human populations past and present. One notable newer method is described by Sabino Padilla (this issue), who sadly died in the period between the workshop and the publication of this special issue. His article presents GIS-based maps that can complement ongoing anthropological and genetics studies of negrito groups in the Philippines. But the negrito phenotype and the people that carry it remain classificatory puzzles. De Quatrefages worked at the Muséum National d'Histoire Naturelle in Paris, and the workshop convened to reexamine the negrito hypothesis took place at this august institution in September 2012. The articles in this special double issue of *Human Biology* are the written outputs of these deliberations.

A second, largely unspoken question, “Do negritos really exist?” was also considered by some presenters and authors. The need for such a population classification, or any population classification, might also be questioned. In the current age of systems biology, we might think more in terms of networks of characteristics, with individuals, and groups of individuals, flowing in and out, depending on what is of interest to a particular researcher or group of researchers. Such an approach naturally fosters multidisciplinary, since the study of networks of characters often reveals complexities that require a range of disciplines to unravel. There remain, however, questions that are based on one type of population construct or another. Population genetics, evolutionary biology, archaeology, and linguistics, for example, need groups to carry what is of interest to them—in these cases, genes, skeletons, material culture, and language. With respect to the peopling of the world, genetic data point to Southeast Asia as a corridor for migration of early human populations. The existence of phenotypically distinct populations in this region makes the human evolutionary biology of this region more difficult to understand. This international workshop revisited the negrito hypothesis with the explicit aim of understanding negritos as human population outliers by engaging with evidence from all disciplines that have studied aspects of their human biology and culture, from archaeologists and anthropologists (physical, cultural, and social) to linguists and population geneticists. The question of whether these populations share common ancestry was thus addressed from a range of perspectives, with intense debate surrounding the use and usefulness of the term *negrito*, what it might mean to whom, and the extent to which the idea of a negrito phenotype can inform present-day understanding and analyses of human migration and recent human evolution in this region.

The first article, by Higham (this issue), places negrito populations past and present within a broader context of hunter-gatherer populations in Southeast Asia. Drawing on archaeological and biological anthropological evidence and, to a lesser extent, population genetics, the author describes how various hunter-gatherer groups ancestral to present-day negritos became marginalized by the expansion of different populations of Neolithic rice and millet cultivators. Some hunter-gatherer groups underwent integration with the practitioners of these new technologies, but others withdrew into the interior rainforests and preserved their existing

subsistence economies. Energetics are fundamental to all aspects of human life history, including the production of short stature (Leonard and Ulijaszek 2002), and marginal energy returns in foraging is one potential environmental pressure that could have favored natural selection for short stature among proto-negritos. Early marginalization was not the norm for all negrito groups, however. According to Higham, the Andamanese may have undergone near extinction and subsequent survival in forest refugia during British and then Indian colonial administrations during the nineteenth and twentieth centuries.

Aspects of the negrito phenotype (as defined by de Quatrefages) are scrutinized in articles by Stock and Bulbeck, respectively. Stock (this issue) presents an analysis of the skeletal phenotype of Andaman Islanders and Aeta foragers from the Philippines in relation to phenotypic variation among hunter-gatherer groups more globally, after controlling for stature. He finds no differences and concludes that consideration of hypotheses of negrito origins need to go beyond stature as a defining phenotypic characteristic. Phenotypic characteristics may be canalized or plastic in response to environmental variation (Stock and Buck 2010), and assumptions about the genetic basis and evolutionary stability of human skeletal traits are confounded by this inconvenient fact. Bulbeck (this issue) agrees with Stock, stating that stature is not diagnostic of negriteness, although negritos lie at the lower end of the Southeast Asian range of variation in this characteristic. Bulbeck goes on to say that negritos are linguistically diverse and culturally heterogeneous and may differ according to mode of subsistence. In an analysis of craniometric affinities, he shows Andamanese and Semang people to be more similar to each other and to sub-Saharan Africans, whereas Philippine negritos are dissimilar to both. Furthermore, the negrito populations studied by him show morphological continuity with geographically concordant and adjacent populations. These two articles leave open the question of whether or not the negrito classification is a useful one.

Various articles examine the origins, affinities, and population dynamics of negrito populations past and present. Déroit and colleagues (this issue) present results of studies of human fossils from Tabon and Callao going back to 30 kya for the former and to 66 kya for the latter, in an attempt to identify the origins of these populations. They conclude that the issue is too complex to be resolved with the very limited morphological evidence available at present. McAllister and colleagues (this issue) compare mitochondrial DNA (mtDNA) haplogroups of short-statured Australian Aboriginal groups in Far North Queensland and Tasmania with those of other Australian Aboriginal populations and Southeast Asian negritos and show them to cluster with the former and to be very distantly related to the latter. Guillot and coauthors (this issue) examine effective population size using a model-free statistical inference procedure, the Bayesian skyline plot, on mtDNA diversity. They show that the female effective population size grew slowly through the late Pleistocene, peaking between around 15 and 20 kya and then declined slowly through the Holocene. Their analyses suggest that this pattern of population change holds for large tracts of Island Southeast Asia, even for populations with

very different histories, including those of Philippine negritos. They argue that the biggest influence on population size changes across Indonesian prehistory was not the expansion of Neolithic farming groups but a regional decline in population size following the flooding of lowland Indonesia. This has implications for viewing the ways in which the negrito phenotype came to exist and persist across time. Chaubey and Endicott (this issue) examine evidence for an early peopling of the Andaman archipelago from South Asia, using genetic evidence from genome-wide autosomal single-nucleotide polymorphism (SNP) data. They find no support for the settlement of the Andaman Islands by a population related to the initial out-of-Africa migration by humans, or their immediate descendants in South Asia. Nor do they find evidence of a single ancestral population for the different groups traditionally defined as negritos. They acknowledge that present levels of genetic resolution may be inadequate for finding such evidence, and they do not discount the possibility of demonstrating single ancestry into the future. Jinam and colleagues (this issue) examine admixture patterns and genetic differentiation in negrito groups from western Malaysia, using genome wide SNP data. They demonstrate the possible presence of recent admixture in both negrito groups studied, just as among Philippine negritos.

Social and cultural factors are also important in the construction of human populations across evolutionary and more recent time, and the possibility of recent admixture among negrito populations complicates the biological understanding of them. Heyer and colleagues (this issue) compare male-female effective population sizes and integration of immigrants into Aeta and Agta communities in the Philippines. Their data suggest limited incorporation of mid-Holocene Australasian settlers following initial contact with early cultivators. The ratios of male to female effective population sizes are strongly and differently skewed among the Aeta relative to the Agta, underscoring the importance of social and cultural factors in reproduction and population dynamics in the past as much as in the present. Heyer et al. point to kinship systems with sex-specific descent rules as one explanation for the contrasts observed in their data and, alternatively, to the transmission of reproductive success via sociocultural factors that may have led to advantages for local females among the Agta and for local males among the Aeta. However, they do not speculate about what these putative advantages might have been. Turner (this issue) examines patterns of gene exchange in the Philippines and considers advantages of extended kinship among and between the first Austronesians (who arrived around 4–4.5 kya) and the indigenous foraging populations, which may have resulted in incorporation of forager women into settler communities.

Short stature among many contemporary human populations is well documented (e.g., Eveleth and Tanner 1990; Uliaszek 1993) and can to some extent be explained as a phenotypic response to environmental stressors of various types (Uliaszek 2006). Among the most common stressors are undernutrition and exposure to infection (Uliaszek 1996). Recent work indicates that such stressors may operate via epigenetics (Holliday 2006), and thus the negrito phenotype need not be an outcome of natural selection but of environmentally

mediated gene expression that persists across generations. While it is currently impossible to test the extent to which the negrito phenotype is, and was, shaped by epigenetics, it is certain that such processes are important to consider, given the great extent of epigenetic processes across mammalian biology (Hallgrimsson and Hall 2011). Further examinations of the negrito phenotype in this special double issue engage with ecological processes in very important ways. Bernstein and Dominy (this issue) explore the possibility that short stature among the Aeta may be a consequence of their immunological ecology, by the transmission of memory of past infectious environments from mother to child via breast milk. They find no compelling evidence for this, although the model they present could be modified to explore other types of environmental stress on the physiology of physical growth of negritos. Stresses of different kinds, including nutritional ones, contribute to the evolutionary ecology of all populations, although human populations do not merely respond to them; they also try to ameliorate them, socially and culturally. The article by Lye (this issue) considers present-day socially mediated negrito adaptations to risk and uncertainty, including the social and economic relationships they have with their neighboring communities. Most important, they observe that the easy passage to and from widely scattered environmental resources (which can ameliorate dietary and nutritional stress; Ulijaszek et al. 2012) is facilitated by their maintenance of a flexible regime of friendly exchange partners. Another ecological explanation for the short stature of negritos has been in relation to natural selection favoring some arboreality among proto- and early negritos. Such explanations are treated in depth by Venkataraman and colleagues (this issue), who examine phenotypic plasticity in climbing-related traits in the ankle joint of great apes and rainforest hunter-gatherers. They find no clear evidence for this, however.

Using genome-wide scans of individuals from short-statured populations (including those classified as negritos) in Africa, Asia, and Melanesia, Migliano et al. (this issue) consider the evidence for positive selection for short stature. They show that negritos in the Philippines and Papua New Guinea are genetically more similar to their non-negrito neighbors than to each other. They conclude that geographically distant negrito groups are likely to have evolved short stature independently, but not through selection on genes associated with height variation. This leaves open the possibility that short stature among negritos is a by-product of other biological processes, immunogenetic responses to infection being the most likely among them. It is also possible that there may have been epigenetic responses to nutritional and disease stress, weakening the likelihood of selection on height-related genes. On the basis of their analyses, Migliano et al. also find suggestive evidence for selection of genes associated with thermoregulation, but they discount locomotion-based explanations for short stature among closed forest dwellers (Cavalli-Sforza 1986). Tommaseo-Ponzetta et al. (this issue) examine mtDNA and Y-chromosome markers and body size phenotypes of two short-statured populations of highland fringe New Guinea and show that they are rather similar. They view the small stature phenotype among these populations to be an

independent secondary adaptation, possibly driven by iodine deficiency. Given the role of iodine in thyroid function, this might be a possible selective pressure on the thyroid-related genes identified by Migliano et al. as being associated with short stature in some of the populations they examined.

Subsequent articles examine the population identity of negritos through linguistics and cultural (notably kinship) affinities. Reid (this issue) uses evidence from naming practices of both negrito and non-negrito groups, showing that many such groups have maintained unique identities distinct from others since the dispersal of Malayo-Polynesian languages. The article by Dunn and colleagues (this issue) presents a Bayesian phylogeographic analysis of a large sample of Aslian languages, which are members of the oldest recoverable language family in the Malay Peninsula. Their analysis supports the long-held idea that Austroasiatic languages arrived in the Malay peninsula with the Neolithic. While earlier accounts of Aslian prehistory emphasized the shared biological, cultural, and linguistic roots of Aslian speakers (Fix 1995), Dunn et al. show that the Aslian language group has evolved, spread, and diversified among genetically heterogeneous populations. In the next article, Blust (this issue) argues for a common cultural and linguistic past for negritos of the Malay Peninsula and the Philippines at some undetermined time that probably preceded the end of the Pleistocene. The Andamanese remain distinct, however. In a following article, Benjamin (this issue) reviews literature concerning the negrito phenotype in populations of peninsular Malaysia, southern Thailand, and Southeast Asia. He shows that variation in stature, degree of darkness of skin, and extent of curliness of hair within these populations is great enough to make the negrito classification a very imperfect one.

The debate about the biological identity of populations with the negrito phenotype will doubtless continue, but the evidence presented in this double issue of *Human Biology* speaks more against the category of negrito than for it. While populations with the negrito phenotype form a small proportion of all contemporary populations in this region, they have remained a persistent presence. And without a fascination about their origins, there would not be such a depth of knowledge about the human biology of this region more broadly as there is now. I congratulate the organizers of the workshop and the guest editor of this special double issue of *Human Biology* for bringing together such an outstanding range of scholars representing a diversity of disciplines, all speaking to this issue. What's in a name, after all? When it comes to negritos, quite a lot.

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