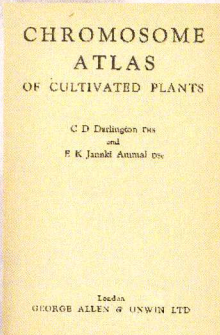
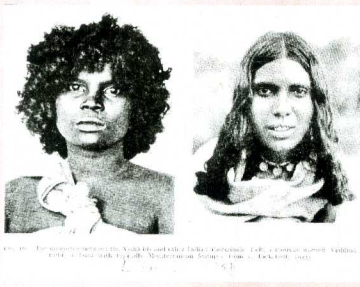


The Modern Synthesis

This section explores an interdisciplinary science movement in the early 20th Century, devoted to explaining evolution, called the “Modern Synthesis”. The Modern Synthesis describes the fusion (merger) of Mendelian genetics with Darwinian evolution that resulted in a unified theory of evolution. It was developed by a number of evolutionary biologists in the 1930s and 1940s including Julian Huxley who coined the term. At the heart of this movement were many British research institutions, such as the John Innes Horticultural Institution which provided education to international students, many of whom came from India. Societies and international conferences such as the World Genetics Congress also provided a platform for interdisciplinary and international debates, including the Indian Science Congress which was held regularly since 1914.



Science and the Colonies

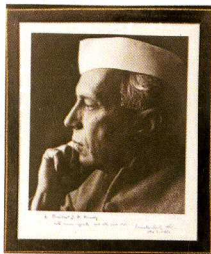
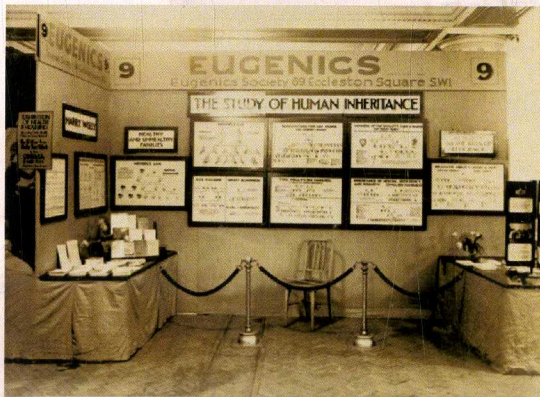


This section lays out the history of the British Empire's approach to science colonised India beginning with the early economic exploitation of natural resources, and the formation of various Scientific Surveys. As science education in India began to rise, Indian scientists became more involved with India's scientific institutions, including J.C. Bose, who established the Bose Institute in 1917. This heralded the golden

era of Indian science with many eminent Indian scientists including Meghnad Saha and CV Raman making their name in a variety of scientific disciplines.

Eugenics

This section introduces the eugenics movement, and the Eugenics Society in Britain, which was the centre of many debates around mixed-race families, sterilisation of the “unfit” and birth control. The movement was influenced by ideas of Francis Galton and Charles Darwin. Several influential geneticists were important figures in the eugenics movement, including C.D. Darlington, R.R. Gates and J.S. Huxley, although each had different ideas about eugenics. India also had a eugenics movement, which were primarily focused on improved family planning.



Scientific Humanism, Anti-Racism and Nehruvian Science

This section looks at the role of humanism within scientific movements of the early 20th Century, which shifted the explanation of belief, civilisation and morality from religion to human agency. Humanist movements have typically been non-religious and aligned with secularism with a reliance on science and reason. From these humanist principles emerged UNESCO's statement on race, which sought to create an anti-racist science in the wake of the Second World War and the Holocaust.

Nehru was also a humanist in many ways, which impacted his views on the role of science and education, in building a model for a new India.

Ecology and Environmentalism

This section explores the science of ecology and its relationship to environmentalism in post-independent India. It is not surprising that some of the scientists we talked about embraced environmental activism. Janaki Ammal was an early proponent of nature conservation, providing support to the “Save Silent Valley” protest against the building of a hydroelectric dam and criticising the “Grow More Food” Campaign. At the same time the Green Revolution also found early support in India, through M.S. Swaminathan, a revolution that championed scientific advances, such as high-yielding varieties of crops, but also relied on chemical fertilisers which had negative effects on the environment.

More recently there has been a rethinking around traditional crops such as millets whose importance has been recognized by UN which has declared 2023 as the International Year of Millet as recommended by India. A food consumed by tribal communities around the globe low fertilizer and less water requirement for its cultivation makes it more environmentally friendly. The exhibition highlights BSI's work in this field.

This exhibition also showcases objects in the BSI collection including plants, and plant-based products important for tribal communities. These products were also vital for Indian commerce and trade for a long period. The century old textile design and natural dyes collections held by the BSI are one of the finest examples of these.



Indigo dyes



Embroidered Muslin

EK Janaki Ammal and the Genetical Society

This short film, directed by Susan Thomson, follows the life of E.K. Janaki Ammal, with particular reference to her work at the Coimbatore Sugarcane Breeding Station with T.S. Venkataraman in the 1930s. Janaki Ammal as geneticist for the institute was instrumental in creating hybrid canes, with increased yields. Her own pet project was to develop a hybrid between sugarcane and maize.



Alongside this main exhibition, we have two companion exhibitions, curated by research partners of CWEH, Dr. Anindita Saha and Dr. Sangeeta Dasgupta.

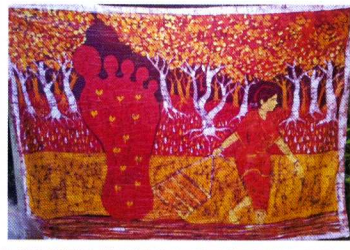
The Sundarbans Delta: Untold Stories of Children from the Margins

In the Sundarbans, a fragile delta ecology environmentalism plays out in different ways. Approximately 7.2 million people who are dependent on subsistence farming and fishing live in 54 islands of the Sundarbans. In the 1770s the reclamation of marshland in the Sundarbans caused migration of people from different districts of neighbouring areas as labourers for clearing the forest and converting the land into productive agricultural land. Inhabitants of the region have since confronted several environmental, economic and political challenges. Sea level rise, cyclones, storm surges, and coastal erosion threaten the ecological diversity of the Sundarbans delta and create unsafe living for vulnerable communities. As their political power is limited the Government does not prioritise hazard mitigation.



Remembering the trauma

The “Mangrove School Project” was initiated in 2019 November as part of a University of Sussex project and as part of the TAPESTRY (Transformation as Praxis: Exploring Socially Just and Transdisciplinary Pathways to Sustainability in Marginal Environments) financially supported by the Belmont Forum and NORFACE Joint Research Program on Transformations to Sustainability and is co-funded by ESRC, RCN, JST, ISC, and the European Commission through Horizon 2020, of IDS (Institute of Development Studies, University of Sussex). The project hoped to recover voices from communities in the delta in marginal environments with high levels of uncertainty using a bottom-up methodology. The research work for the school Project was mainly done by Centre for World Environmental History, University of Sussex.



Save the mangrove forest!!

This exhibition showcases the oral and visual narratives of the children surviving amidst climate change induced uncertainties in the Sundarbans, through their art, including paintings, tapestries, posters, batik, tie and dye and block printing work. Our research objective primarily focused on how they visualised climatic vulnerabilities and their hopes for the future.

We find the voice of the community reflected in the voices of the children aged 12 to 18 years. To document the unheard voices of these school children initially four workshops were organized at two places- Raidighi and Kultali and 65 children from two vernacular co education schools participate in these workshops. The aim was to narrate the untold stories of the children from the margins. The children shared their experiences through evocative artworks and the



Workshop at Raidighi & Kultali

accompanying narratives highlight the present-day reality of living in the delta community.



The unheard voices being heard

Every year, a cyclone hits the Sundarbans, their houses get damaged and they are evacuated to rescue centres with their belongings, the most important being documents, dry foods and domestic animals. However, before they can completely rebuild their new house they are hit by the next cyclone. According to them, no social or economic upliftment would be transformative until their voices are heard and incorporated during regional policy-making.

The Oraons of Chhotanagpur: Revisiting and Challenging Colonial Representations

This exhibition brings together nineteenth-century colonial representations of the Oraon 'tribe' and the voice of one of the most prominent Oraon public intellectuals of Jharkhand in postcolonial times.

It traces shifting images of the Oraons through the nineteenth century and shows how changes in colonial representations, particularly from the late nineteenth century onwards, were influenced by the emergence of anthropology as a discipline and the application of ideas of race in the colony. It also brings to the fore the voice of Bishop Dr Nirmal Minz - theologian, anthropologist, educationist and political activist - who drew on Adivasi experiences and their modes of negotiation with everyday challenges and presented an alternate Oraon Adivasi identity.



This exhibition argues that in order to rethink the production of knowledge on the concept of 'tribe' in colonial India, a concept that continues to wield substantial influence even today, one needs to hear Adivasi voices which challenge colonial representations and reveal a different history of the struggle for justice, dignity, and human rights.

Oraons of Chhotanagpur: A Journey through Colonial Representations



This section uses lithographs, photographs, tables and museum objects to unravel shifting images of the Oraons of Chhotanagpur in nineteenth century colonial representations. Visual representations reveal that the Oraons were described in the early nineteenth-century as 'mlecchha' [ritually impure] and 'dhangar' [migratory labour] or as Coles/ Kols.

However, by the late nineteenth century, they were referred to as a 'tribe' and attributed the shared characteristics of a universal category. Artifacts sent to

museums in Europe from colonies were used for comparative studies across continents, which, in turn, influenced the new discipline of anthropology.



Through the Lens of an Adivasi: Bishop Dr Nirmal Minz (1927-2021)

This section presents poems, unpublished articles and opinion-pieces written in Kurukh, Hindi and English by Bishop Dr Nirmal Minz in order to illuminate the thoughts of an Adivasi public intellectual on Adivasi communities and, in particular, the Oraon/Kurukh people of Jharkhand. This selection, a snippet from a much larger collection of personal papers, is part of an ongoing project titled Notes, Letters, Diaries, Posters and Pamphlets: Narrating Ideas of Indigeneity in Jharkhand, India' funded by the Modern Endangered Archives Program of the UCLA.



Curators of *Science, Humanism and the Making of Modern India*: Professor Vinita Damodaran and Mike Rayner

Curator of The Sunderbans Delta: Dr. Anindita Saha

Curator of Oraons of Chhotanagpur: Dr. Sangeeta Dasgupta

Exhibitions installation by Dr. Anindita Saha

Film by Susan Thomson

With thanks to: The Botanical Survey of India, The John Innes Centre and the British Library.

With special thanks to Dr. Ashiho Mao, Dr. Manas Bhaumik, Dr. Anindita Saha, Dr. Sangeeta Dasgupta, Dr. Sarah Wilmot, Professor Paul Basu, Dr. Mick Frogley, Dr. Antonia Moon, Dr. Benedict Burbridge, Dr. Perpetua Kirby, Laharee Mitra, Ratan Saha and the children of the Mangrove School Project.

Thank you for visiting the exhibition. We would love to hear your thoughts through the feedback form available here: <https://forms.office.com/e/jhc3mmHzQr>



Exhibition: *Science, Humanism and the Making of Modern India*
10th January 2023 – 10th February 2023

Botanical Survey of India
Industrial Section, Indian Museum



A remarkable intellectual effervescence, which began in the early 20th century led to a series of interdisciplinary debates around genetics, cytology, botany and eugenics amongst scientists globally. These debates centred around a reassessment of the role of humans in the natural world, with positive and negative connotations. The eugenics movement had attempted to organise human reproduction along racist lines, while post-war environmentalism alerted the world to the reality of environmental threats. The outcome of these debates was a better understanding of humanity's past and a role of humans within the natural world gradually leading to an anti-racist science movement and post-war environmentalism by the mid-20th century.

This exhibition delivers some of the research outputs of the University of Sussex's project: *Science and the Colonies: Hidden Networks of Botanical Science, Ecology and Eugenics at the End of Empire*, funded by the Arts and Humanities Research Council (AHRC) and Natural Environment Research Council (NERC), part of UK Research and Innovation (UKRI). Using previously unpublished photographs and objects in the Botanical Survey of India's (BSI) collection it explores for the first time the development of these debates, the network of scientists that emerged in Britain and India and the unrecognised contribution of Western-trained colonial scientists including the role of a pioneering Indian woman scientist, E.K. Janaki Ammal. The aim of the exhibition is to re-examine the practices of science in this period by exploring the role of race, gender and indigenous knowledge from the colonies in the cross-fertilisation of ideas.

The first two subsections presented here, establish the context for the scientific and political landscape that frames the movements explored in the subsequent three sections. The conclusion welcomes you to reflect on the issues raised throughout the exhibition with a series of questions, listed later in this brochure. We would love to hear your thoughts and reflections on these questions, by answering a short feedback form, available through the QR code/link on the back page.

