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		<p>APRIL</p> <p><i>fakes</i></p>  <p>DAY</p>	<p>Scientific racism and prejudicial measurement</p> <p>Errol Francis</p>
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The Pitt Rivers Craniometer. Photo courtesy: Salisbury Museum

The Pitt-Rivers craniometer and other spurious devices

Time was when, as an upper-class British member of the colonial ruling elite or army officer, one could exploit one's privileged status to become a self-styled anthropologist, ethnographer or archaeologist. One such person was Maurice Vidal Portman (1860-1935) who was a British naval officer, assistant superintendent of the Andaman Islands penal colony and he is best known for subjecting the indigenous Andamanese to his experimental photographic anthropometry.¹ Another was Colonel James Jonathan Harrison (1858-1923) a big game hunter and collector of indigenous art and natural history specimens who had connections with the depraved colonial regime of King Leopold II in the Belgian Congo.²

Yet another officer and gentleman, who became a collector and self-taught archaeologist, was Lieutenant-General Augustus Henry Lane-Fox Pitt-Rivers (1827-1900). Pitt-Rivers obtained a few objects whilst on active military service but the majority of ethnographic items in what became a vast collection was acquired from dealers, auction houses, and from fellow members of the Anthropological Institute of Great Britain and Ireland of which he was president in 1881-2. In 1884 Pitt-Rivers donated 20,000 objects to the University of Oxford which formed the basis of the eponymous museum that continues to the present day.

Pitt-Rivers carried out excavations and is credited for bringing a 'scientific' approach to archaeology, through stratigraphic observation and recording: the study of layered soil, debris, and cultural materials (strata) to interpret the relative chronology and history of a site – and he is sometimes referred to as 'father of British archaeology.'³

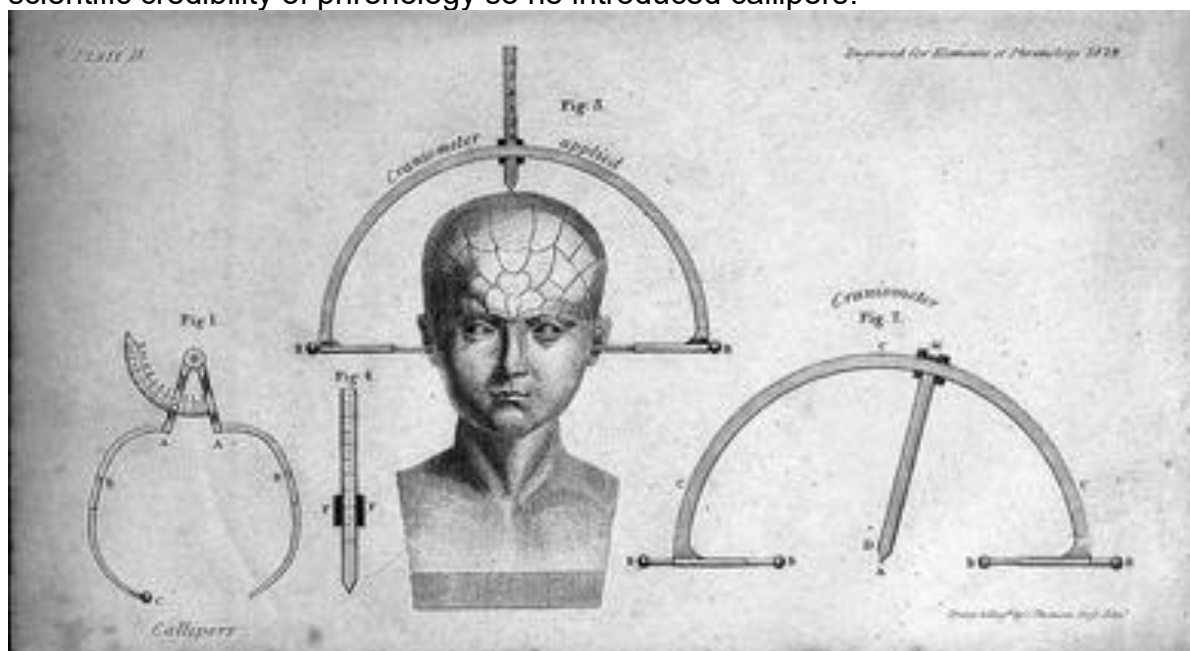
Pitt-Rivers inherited the Rushmore Estate on Cranborne Chase, Wiltshire, in 1880. This estate, on the borders of Wiltshire and Dorset, contained many archaeological sites that were exceptionally well preserved and a vast number of monuments and settlements dating from prehistoric times to the medieval period. Pitt-Rivers made many important discoveries, digging on Cranborne Chase between 1880 and 1900. This collection was given to the Salisbury Museum by the Government in lieu of death duty in 1975. It not only contains important local finds, but also handmade models of archaeological sites and ethnographic items from the former Pitt-Rivers Museum at Farnham, Dorset.⁴

Pitt-Rivers was not only interested in the material culture unearthed in his archaeological excavations but also the human remains because he wanted to ascertain racial characteristics skull shapes and sizes and that measuring them would help to recognise different groups of early settlers. However, in this respect, the Pitt-Rivers reputation for 'scientific' method is questionable because he, like many of his contemporaries, engaged in the now discredited practice known variously as craniology or phrenology that was developed by European and American physicians, anatomists, sociologists and criminologists.

In the late 18th century Joseph Gall of Vienna invented a combination of physiognomy and brain localisation that he originally called 'craniology' (the science of the head) and later renamed it as 'organology' (the science of the organs of the brain). Gall argued that personality traits and intellectual abilities could be determined by measuring the bumps and depressions on an individual's skull.⁵ Gall worked with Johann Spurzheim on a variety of important neuroanatomic studies to support this new 'science.' By 1812, when they parted company Spurzheim had become intrigued with the psychosocial potential of their research, which he renamed 'phrenology' (the science of the mind).⁶

Phrenology was based on the now discredited belief that human character traits and even intelligence can be correlated with visible or palpable cranial bumps (or depressions) and dimensions thought to reflect underlying brain areas differing in size and levels of activity.⁷ Since the means for determining these cranial features relied heavily upon seeing and feeling these bumps and depressions, a more objective measurement instrument was needed. So George Combe (actually trained as a

lawyer) thought that a more systematic measurement system would increase the scientific credibility of phrenology so he introduced callipers. ⁸



Craniometer callipers from *Elements of Phrenology* (1824) George Combe. Courtesy Wellcome Collection.

Combe's craniometer allows various parts of the cranium to be measured off from a calibrated arc of a circle whereas Broca's instrument allows the angle of the forehead to be scaled off in degrees since these dimensions were thought to be an indicator of intellectual capacity and moral character, with a vertical or protruding forehead considered the highest, or most 'noble,' and a sloping or receding forehead considered indicative of lower intelligence or 'animal' nature. Broca had invented another instrument called a goniometer specifically for measuring what was termed the so-called 'Jacquart' angle of the face, the two arms of the device are placed on either side of the skull. The vertical measure is placed on the skull so the angle from brow to jaw can be read off the graduated dial at the bottom.



Paul Broca's wooden and brass craniometer with hinged attachments. Photo courtesy Science Museum Group



Broca *goniometer* for determining the 'facial angle.' Photo courtesy Science Museum Group

Paul Broca (1824–1880): a French surgeon, anthropologist and pioneering craniologist developed various hinged craniometers to measure skulls for anthropological studies. This craniometer includes various hinged attachments to aid measurement of skull sizes. There were many other versions of the craniometer as phrenology, what might be termed a sub discipline of the 19th century obsession with anthropometry, measuring of the human body to determine physical characteristics would support racialised theories. Looking at these different versions of craniometers helps to understand why Pitt-Rivers needed his own version. Combe's and Broca's devices were measuring different things, the former focusing on cranial dimensions and the latter including facial angles. Furthermore, it is clear that the Pitt-Rivers version is measuring the cranium in a different way, from a single vertical point from the nose whereas Broca's take the reading from different points on the scalp and crown of the head.

However, according to the Salisbury Museum, Pitt-Rivers owned two craniometers to measure the size and shape of skulls because he thought that racial characteristics could be discerned in skull shapes and sizes and that measuring them would identify different groups of early settlers. Pitt-Rivers said:

I have contrived an instrument for taking the profiles with perfect accuracy. The skull is fixed by means of a blunt point into the ear openings on either side . . . The scale . . . enables . . . any point on the profile of the skull and lower jaw, to be read off with great precision . . . The instrument is made of aluminium, and the legs are removable, so as to be light enough for use with a living subject.

Many ancient measurement systems are based on the human body, like the foot, the hand, or the finger⁹ and the imposition of a measuring system is an aspect of power. As Michel Foucault so consistently argued, the body is a central point for analysis of the shape and exercise of power.¹⁰ The racialised subject, then, has been one such locus for European theories that seek to justify their supremacy by means of pseudo-scientific theories and practices that involved spurious types of measurement and calibration to provide a cloak of objectivity to prejudicial, racist ideas. So this means that considering how power was exercised in the history of pseudo-scientific racism, must necessarily include the body. There is a political ecology to scaling, whether this is the natural world, geography or outer space. So those who can dictate the means by which the world around us, or within us, can be measured will also be who those can dominate it and shape it to their will.¹¹

The kind of measurement systems proposed by phrenology and anthropometry is inextricably linked to racial classification and taxonomy and in this respect Carl Linnaeus *Systema Naturae* (Human animal and mineral) is an important milestone in the classification of humans in relation to other species. Once Linnaeus had suggested the classification of humans as *Homo sapiens* and divided them into four geographic varieties: Europeanus (white), Americanus (red), Asiaticus (tawny), and Africanus (black) – then the door was open to seek a measurement system to identify the unique physical manifestations as well as the associated attributes: e.g. Europaeus as ‘light, wise, inventor’ and Africanus as ‘sly, sluggish, neglectful.’¹²

Phrenology was just one part of a larger project to measure or calibrate racial difference. Anthropometry continued well into the 20th century and spread beyond Europe and North America. As late as the 1930s and 1940s, extensive anthropometric research was being undertaken in the south-western borderlands of China, where anthropologists studied groups under the aegis of border administration. Chinese scholars sought to generate the physical characteristics of ethnic minority groups in the south-west of China through the methodology of body measurement, in order to identify forms of social and political intervention in the management of the non-Han population in wartime.¹³

As for the craniometer, the instrument lives on, but now more scientifically used by paediatricians to measure and monitor skull deformities in infants and babies, specifically for physical conditions like plagiocephaly and brachycephaly (flat head syndrome).¹⁴

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