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The Dental Traits of Javanese



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Sesuai dengan Surat Perjanjian Pelaksanaan Hibah Kompetitif Penelitian untuk
Publikasi Internasional nomor 435/SP2H/PP/DP2M/VI/2009

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enquiry
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Reply |myrta artaria to Maciej, Maciej
show details Oct 13

Dear Prof. Henneberg, Chief Editor of HOMO,

I would like to enquire if there is any news regarding the manuscript I submitted, within the topics of dental anthropology that I submitted. Are there any revision I should do?

Thank you for your information

Best regards,
Myrtati Dyah Artaria (Mita)

for "Homo" journal
InboxX

Reply |Maciej Henneberg to me
show details Oct 6

Dear Myrta

I have already sent your paper for preliminary assessment to my co-Editors. Format is not precisely compatible with our Instructions for Authors, but this can be fixed if, following reviews, we ask you for revisions. Your paper has been formally submitted to HOMO.

Best wishes

Maciej

On 5 Oct 2009, at 03:36, myrta artaria wrote:

Dear Chief Editor,

I am sending an article that I would like you to consider to be published in the journal that you are managing.

I hope that this article will be accepted.

Best regards,

Myrtati D. Artaria (Mita)

<the dental traits of Javanese.doc>

(Professor) Maciej Henneberg, PhD, DSc, FAIBiol.

Wood Jones Professor of Anthropological and Comparative Anatomy

University of Adelaide, Medical School

Adelaide, SA 5005

Editor-in-Chief, Journal of Comparative Human Biology "HOMO", Elsevier

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Re: the article
inboxX

Reply | Diane Hawkey to myrta
show details Aug 4

Hi Myrta,

30 people for sample is OK, but I don't know much about the people in your sampling area, just in case they have much variation, you will be able to see them in a bigger number of sample.

It's a good idea that you have a look at the dental plaques made by ASU. They cost \$70 each.

All best wishes,
Diane

myrta artaria to Diane
show details Jul 16

Dear Dr. Diane Hawkey,

I recently observe the teeth of 30 individuals from Java, and the result is like in this attachment. What improvement can I make for this result? I have sent this to a journal, but I haven't gotten the feedback from the editor. Perhaps, you as the expert of this field, can give me suggestions?

Thank you for your time.

myrta artaria

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Re: Your paper for HOMO

Inbox

Thu, Oct 15, 2009 at 6:50 PM

Maciej Henneberg

<maciej.henneberg@adelaide.edu.au>

To: myrta artaria <myrtati@gmail.com>

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Dear Dr Artaria

Your paper THE DENTAL TRAITS OF JAVANESE
has been reviewed by the Editors of JCHB Homo and found acceptable for the
journal.

With best wishes

Maciej Henneberg
Editor-in-Chief

(Professor) Maciej Henneberg, PhD, DSc, FAIBiol.
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II. Naskah Artikel

Title page

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7. Abbreviated title (running headline): Dental Traits of Javanese

ABSTRACT

This study describes the dental crown morphology of 30 Javanese of known sex and age, in Surabaya, East Java. The purpose was to compare the dental traits to the Sundadont and Sinodont Dental Traits, for indication of admixtures in the area of East Java, especially in Surabaya. The traits being observed were shovel shape, double shovel, winging, tuberculum dentale, interruption groove, canine distal accessory ridges, Carrabelli's cusp, odontomes, premolar accessory ridge, and uncommon shape/place of lateral incisors. The results showed that the sample matched the description of the dental traits of Sundadont, but they also showed evidence of Sinodont types, such as double shovel. The Sundadont is characterized by conservative pattern, trait retention, and less elaboration. The results may lead to the conclusion that native Indonesian, especially those who live in the coastal area, practice mix-marriage or exogamous marriages in the past.

KEY WORDS: Jawa, Sundadont, Sinodont, shovel shape, double shovel, Carrabelli's Cusp.

INTRODUCTION

Studies in dental anthropology have never been conducted on Indonesians even though the area has a rich variety of peoples and cultures. The variety of populations may provide valuable data regarding human evolution (Hillson, 2002), migration patterns (Scott and Turner, 2000), and for solving forensic cases (Brown, 1992), so it is useful to initiate studies in dental anthropology in this area.

MATERIAL AND METHODS

The sample was 30 individuals (22 females, 8 males) from the Surabaya, East Java (Indonesia), whose sex and age were known (age range 15 to 26 years). The dental traits examined were shovel shape, double shovel, winging, tuberculum dentale, interruption groove, canine distal accessory ridges, Carrabelli's cusp, odontomes, premolar accessory ridge, and uncommon shape/place of lateral incisors. Dental traits were scored using the descriptions in Scott and Turner (2000).

RESULTS AND DISCUSSION

Shovel shape was very common, although the expressions were mostly from 0 to 3 (Table 1) of ASU shovel shape dental plaques. This is expected given the Asian ancestry of the group, especially the Sundadont. The most frequent degree of expression for upper first incisor was 2, and 0—no shoveling—for the lateral incisors. According to Scott and Turner (2000), the frequency of winging in recent Southeast Asian people is around 20% to 50%. It was also noteworthy that the frequency of the sample who did not have shovel shape upper incisor were quite high (Table 1), implying that shovel shape was not a good trademark for deciding the “race” of an unknown skeletonized individual. In this sample, the males exhibit less degree of shoveling than the females.

Table 1. The Frequencies of Shovel Shape Incisors

Shovel	Upper teeth			Lower teeth	
	Right	Left		I and C	
	UI2	UI1	UI1	UI2	I and C
0	0.55	0.24	0.29	0.50	0.90
1	0.21	0.31	0.32	0.27	0.10
2	0.17	0.34	0.32	0.23	0.00
3	0.07	0.10	0.07	0.00	0.00
	1.00	1.00	1.00	1.00	1.00

UI1: upper central incisor, UI2: upper lateral incisor, I: incisor, C: canine

Some samples (24% or 7 out of 29 individuals) demonstrated double shovel on the upper first (central) incisors (Table 2). The frequency of double shovel in recent Southeast Asia predicted by Scott and Turner (2000) was only 5% to 18%. The result of this research may as well imply the admixture of the Surabayan people, who live in the coastal area of northern East Java, with the Sinodont—people from the continent of China who migrated to the Indonesian areas during the past centuries. All of the double shovel was found in the upper central incisors, but only in a weak expression—scored 1.

Moreover, the samples who have the double shovel demonstrated fair skin and straight hair, typical of Mongoloid from the Asian continent.

Table 2. The Frequencies of Double Shovel Shape Incisors

Double Shovel	Right		Left	
	UI2	UI1	UI1	UI2
0	0.90	0.76	0.78	0.90
1	0.10	0.24	0.22	0.10
	1.00	1.00	1.00	1.00

UI1: upper central incisor, UI2: upper lateral incisor

Incisor winging occurred in 18% to 21 % of the sample (Table 3). Very high frequencies of winging are usually found in Sinodont dentitions, especially living in northeast Siberia and north America. The people of Java are labeled Sundadont, and these data suggest that Sundadont groups may also have quite high frequencies of winging, around 15% to 25% of the recent Southeast Asian people, according to Scott and Turner (2000).

Table 3. The Frequencies of Tuberculum Dentale (TD), Interruption Groove (IG), Winging, and Uncommon shape/place of Lateral Incisors

	TD		IG		Winging		LI	
	R11	L11	R11	L11	R11	L11	RI2	LI2
0	0.79	0.82						
1	0.10	0.04						
2	0.07	0.14						
3	0.03	0.00						
Absent			0.93	0.93	0.79	0.82	0.90	0.87
Present			0.07	0.07	0.21	0.18	0.10	0.13
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

R11: right central Incisor, L11: left central incisor, RI2: right lateral incisor, LI2: left lateral incisor

Expression of tuberculum dentale was weak to moderate, but most individuals lacked a tuberculum dentale on their central incisors (Table 3). Only one individual showed a pronounced tuberculum dentale. This was typical of Sundadont dentition that mostly did not have elaboration of dental traits. In this sample, the males exhibit less degree of expression than those of females.

According to Scott and Turner (2000), the Sunda-Pacific people—including the Southeast Asians—may have 20% to 40% of the population exhibiting interruption groove. However, interruption groove on the upper first incisors occurred in only 7% of the sample of this current research (Table 3).

The uncommon shape/place of lateral incisors were found in some of the sample. Some upper lateral incisors (10% to 13%) were undergoing rotation, crowding, or reduced size. Reduces size lateral incisor is especially interesting because this is typical of European descent dental traits.

Canine distal accessory ridge was uncommon, 72% to 73% of the upper canine did not show any distal accessory ridges (Table 4). This was to be expected as the low to moderate frequencies of robust type teeth were typical of the Sundadont. The occurrence of distal accessory ridges in the lower canine were even less common, as expected in most mandibular dentition. Similar to shoveling and tuberculum dentale, males also showed less degree of expression in distal accessory ridge.

Table 4. The Frequencies of Distal Accessory Ridge (DAR)

DAR	Upper		Lower	
	RC	LC	RC	LC
0	0.72	0.73	0.93	1.00
1	0.03	0.00	0.03	0.00
2	0.03	0.07	0.00	0.00
3	0.14	0.13	0.03	0.00
4	0.07	0.07	0.00	0.00
	1.00	1.00	1.00	1.00

RC: right canine, LC: left canine

Carrabelli's trait complex was expressed in almost half of the cases (Table 5). The degree of expression ranged from 0 to 7. It is notable that the expression of Carrabelli's cusp on the right and left first molar in this sample may be asymmetrical.

Table 5. The Frequencies of Carrabelli's Cusp

	RM1	LM1
0	0.52	0.58
1	0.00	0.00
2	0.04	0.00
3	0.00	0.00
4	0.20	0.15
5	0.20	0.27
6	0.00	0.00
7	0.04	0.00
	1.00	1.00

RM1: right first molar, LM1: left first molar

The frequencies of odontomes on the premolar were quite surprising in this sample, it was exhibited in 2 out of 30 (7%) individuals (Table 6). Scott and Turner (2000) predicted that 1% to 3.5% of recent Southeast Asian people have the traits. Other dental traits found in premolar was the accessory ridge, which were found in 50% of the sample, on the second of upper premolar.

Table 6. The Frequencies of Odontomes

Odontomes	Upper				Lower			
	RP2	RP1	LP1	LP2	RP2	RP1	LP1	LP2
Absent	1.00	1.00	1.00	1.00	0.92	0.92	0.93	0.92
Present	0.00	0.00	0.00	0.00	0.08	0.08	0.07	0.08
	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

RP2: right premolar distal. RP1: right premolar mesial, LP1: left premolar mesial, LP2L left premolar distal.

CONCLUSION AND SUGGESTIONS

Sundadont people who have higher frequency of derived traits is thought to have evolved on Sundaland during Upper Pleistocene. Based on the dental traits, the sample matched the description of Sundadont people—“exhibits more conservative pattern, typified by trait retention rather than elaboration” (Scott and Turner, 2000). However, some of the samples demonstrated typical Sinodont dentition, such as double shovel, although in weak expression.

For the Indonesian people, although they have Sundadont type of dentition, a great deal of variation may occur due to the mix-marriage with Chinese, European and Arabs who often came to the Indonesian area a few centuries ago. The variation would depend on the local culture, whether they follow more of endogamous or exogamous type of marriage.

The results may lead to the conclusion that native Indonesian, especially those who live in the coastal area, are more willing to have mix-marriage than it was thought. Therefore, it is suggested to do more dental traits research in this area so that comparison can be made with the people who live in mountainous area, or people in this area who are keener to abide endogamous type of marriage.

It would also be interesting to do research in the Chinese people who live in this area. They might have more Sundadont type of dentition compared to the Chinese in the Continent, due to mix-marriage with the native people. Chinese in Indonesia follow patriarchy type of family, so that the mix-marriage with the native people may not show in the name of the family of the male line. This result may give an implication to the

local, regional and national law of Indonesia which often segregate the Chinese in Indonesia from the native people.

There was an indication of differences between males and females in the degree of expression in shoveling, tuberculum dentale, and distal accessory ridge. It would be useful to do more studies in comparing the males and females children and the parents, to see how the dental traits are pass down to the offsprings. It would also be useful to study the possibility of sexual dimorphism in the dental traits of people in this area, although results in other areas did not support the consistent occurrence of sexual dimorphisme in most dental traits (e.g. Rothhammer et al., 1968; Aas and Risnes, 1979).

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Manuscripts should be written in English. Authors whose mother tongue is not English should have the manuscript translated by a professional translator or checked by a native English speaker prior to submission. Use one spelling style throughout the entire manuscript (Example: colour, palaeoanthropology and metre in British English or color, paleoanthropology and meter in American English).

Typing (in Times or Times New Roman for English language, font size 12) must be in 1.5 line spacing, aligned to the left, unjustified margins at the right. No footnotes are allowed in text. First paragraph line indented 0.5 cm, reference list pendant 0.5 cm. Title and chapter headings in larger font, bold face, sub-chapter headings in bold and smaller than title and chapter headings (all in normal face not in italics). Use separate line for each chapter or sub-chapter heading. Do not number the chapters or sub-chapters. Use italics for species, genus names, medical terms in Latin or, however as rarely as possible, for stressing a particular fragment (examples: *Australopithecus africanus*, hyperostosis frontalis interna, "The coronal talar neck plane is the plane γ "). Number each line and page consecutively starting with the very first page.

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Example:

Little Foot and big thoughts – a re-evaluation of the Stw573 foot from Sterkfontein, South Africa

R. Kidd ^{a,*}, C. Oxnard ^b

^aSchool of Science Food and Horticulture, University of Western Sydney, Campbelltown, NSW 2560, Australia.

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Abbreviated title: Re-evaluation of Little Foot

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Second page: Abstract

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Example:

Table 1. Distances between four hypothetical family clusters at the Pizzica cemetery based on 18 non-metric dental traits.

Cluster	Family			Clusters		
	No 6 - No 8	No 6 - No 10	No 6 - No 11	No 8 - No 10	No 8 - No 11	No 10 - No 11
MMD	0.0464	0.2304	0.0376	0.3027	0.0863	0.1679
SD	0.0632	0.0509	0.0661	0.0188	0.0923	0.0886
Standardized MMD	1.5274	2.8272*	0.3605	2.3035*	3.9349*	1.8927

MMD - mean measure of divergence

SD - Standard deviation

- - difference statistically significant at 0.05 level (MMD greater than 2.0)

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JUDUL PENELITIAN		TAHUN
Perbandingan ukuran-ukuran antropometris antara anak sekolah di Jepang dan di Malang	Ketua Peneliti	2004
Ukuran antropometris anak sekolah di Malang dibandingkan dengan NCHS (USA)	Ketua Peneliti	2005
Dental traits suku bangsa Jawa	Ketua Peneliti	2006
Dental traits suku bangsa Manggarai	Ketua Peneliti	2007
Morfologi telinga Jawa dan Cina di Surabaya	Anggota Peneliti	2007
Studi Minimalisasi Dampak Pembangunan dan Pengembangan Kawasan Pesisir Lamongan	Anggota Peneliti	2007
Faktor Sosial-Ekonomi dalam Tumbuh Kembang Anak	Ketua Peneliti	2008
Antropometris Mahasiswa Dibanding dengan Referensi Pertumbuhan Internasional	Ketua Peneliti	2009

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Judul Pengmas	Tim Pengmas	Sumber Dana	Tahun
Pelatihan Penanganan Korban Kasus Kekerasan Dalam Rumah Tangga Bagi Ormas se-	Pudjio Santoso Sri Endah Kinasih, Djoko Adi Toetik Koesbardiati	DIPA PNBP	2006

Surabaya	<u>Myrtati</u> Budi Setiawan		
Pelatihan <i>Community Policing</i> (Pemolisian Masyarakat) bagi Aparat Penegak Hukum dalam Menciptakan Keamanan dan Ketertiban Masyarakat Sebagai Kebijakan Polda Jatim	Sri Endah Kinasih Bambang Budiono Pinky Saptandari Toetik Koesbardiati <u>Myrtati</u> Moh. Adib	DIPA PNBP	2007

SKRIPSI, THESIS, dan DISERTASI

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Artaria, M. D. (2009) Antropologi Dental. Yogyakarta: Graha Ilmu

PENGALAMAN NARASUMBER (5 TAHUN TERAKHIR)

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