

2011

Afghan Genetic Mysteries

Bernard Dupaigne

National Museum of Natural History, CNRS UMR 7206, Paris, France, bdupaigne@mnhn.fr

Follow this and additional works at: <http://digitalcommons.wayne.edu/humbiol>

Recommended Citation

Dupaigne, Bernard (2011) "Afghan Genetic Mysteries," *Human Biology*: Vol. 83: Iss. 6, Article 10.
Available at: <http://digitalcommons.wayne.edu/humbiol/vol83/iss6/10>

Afghan Genetic Mysteries

Abstract

Letter To The Editor

Letter to the Editor

Afghan Genetic Mysteries

I am a cultural anthropologist, and I have focused a large part of my research on Afghanistan populations. To my surprise, and despite the international attention given to this country in the last three decades, I have noted the absence of significant genetic studies intended to depict its complex population history. Available articles mainly concern those ethnic groups located across the borders, meaning that any conclusion about Afghanistan is an indirect inference, as only few Afghans living in Afghanistan or recently emigrated from Afghanistan, have been sampled (Agarwal et al. 1976; Rahimi et al. 1977; Goedde et al. 1977a and 1977b; Hirth et al. 1979 and 1982; Benkmann et al. 1980; Berti et al. 2005; Hohoff et al. 2006; Lacau et al. 2011).

Afghanistan is at the crossroad of many civilizations, where Central Asian and Indo-European populations (coming from the Iranian plateau and the Indian sub-continent) have met and sometimes admixed (Bruk 1955; Orywal 1983 and 1986; Barfield 2011).

As Afghanistan has been practically isolated from all neighboring regions from the 18th century to the beginning of the 20th century, more than anywhere else today, spoken languages well identify existing ethnic groups that are fully conscious of their identity. Therefore, linguistic diversity can be used as an excellent proxy to ethnic identity. In total, there are at least thirty-two different languages and dialects in Afghanistan, belonging to four different linguistic families. Twelve languages are specific to this country: Parachi; Munji, Sangleshi-Eshkashimi (Badakhshan province); Kati, Askuni, Waigali, Prasuni (Nurestan province); Pashayi; Ningalami, Watapuri, Sawi, Tirahi (Farhadi 1969 and 1970). For more details, the generally accurate guide “The Ethnologue” can be consulted, and to this end, I will report their capitalized three-letter accession code used at the beginning of each section (Lewis 2009).

Generally, the definition of Afghan ethnic groups corresponds to usual ethnological criteria: a specific political or social organization, a marked preference for endogamous marriages, the feeling of sharing a common culture, values, and memories, and a marked geographic continuity of the territory each group inhabits (Dupaigne and Rossignol 2002).

Before moving on to a systematic description of the ethnic groups living in the country, I would like to highlight that traditionally it was possible to marry a woman of a group considered as inferior, while the reverse was impossible. Furthermore, while marriages between Turkmens and Tajiks or between Uzbeks, Tajiks, and Arabs could be envisaged, in the Pashtuns tribes marriages between tribes far apart from each other were unlikely and almost impossible with any other ethnic group.

Almost no Afghan ethnic group can be considered fully genetically homogeneous in view of the wars, the deportation of populations, the alliances, and its possible past integration in more powerful groups after a defeat. Further, the tradition of stronger groups to accept impoverished families or clans among them, that worked unpaid in exchange of protection until a final integration, may distort a trustworthy genetic inference about ancestry (Centlivres and Centlivres-Demont 1988).

I understand that researchers potentially interested in Afghans have been discouraged by the political instability of the region and by its cultural complexity. While I am unable to fix the first problem, I will describe the different groups, trying to provide a list of hypotheses that can be investigated with molecular markers and highlight the cases where such investigation is likely to be unsuccessful. Most importantly, the chronology of the arrival of the different ethnic groups, largely unknown, would be enlightened by population genetics. Several useful studies could be achieved before the official departure of allied forces scheduled for 2014. The foreign influence cannot be limited to that of conquering armies, and the scientific field open to research is immense.

Concerning the genetic sampling, the size and the ethnic diversity of the population of Kabul and other major cities would often suffice, and travelling to remote regions would not be required. Moreover, without mentioning many well-equipped hospitals, the universities of Kabul, Jalalabad, Mazar-i Sharif, Herat, or Kapisa would be eager to cooperate.

While the reader may conclude that Afghanistan is just a virtual name corresponding to a territory inhabited by tribes having contrasting and independent political aspirations, my experience shows that Afghans of any ethnical belonging, although still attached to their ancient loyalties, consider themselves as citizens of a unique Afghan nation.

Before moving on to the systematic description of the different ethnic groups, I would like to thank Pierre Darlu for providing useful references about genetic investigations and Nancy Wise for translating my text into English. If this letter persuades any anthropologist to start a genetic survey in Afghanistan, I will be glad to answer any inquiry sent through the editorial office of *Human Biology*. Meanwhile, Figure 1 can be used to geographically locate some of the groups I mention.

Major Ethnic Groups

The Pashtuns (PBU, PBT). The Pashtuns, constituting about 40% of the population, represent the dominant ethnic group in Afghanistan (“Afghan” generally is a synonym of “Pashtun”). They initiated the modern Afghan State in 1747 when, during a big tribal meeting (*loya djirga*) in Kandahar, Ahmad Shah, chief of the Abdalis tribe, was elected *emir* (king) of the southern tribes (Bellew 1880; Caroe 1958). They live not only in the south and southeast of Afghanistan, but also in the “tribal belt” of West Pakistan. The Pashtuns (called Pathans in

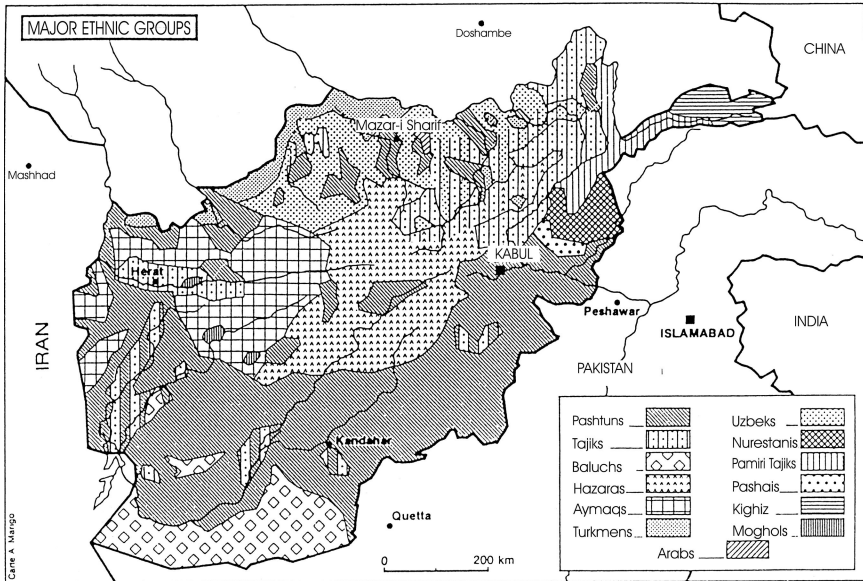


Figure 1. Map of some ethnic groups of Afghanistan (redrawn from Gille 1984, courtesy of Alain Marigo). A more detailed map can be found in Dupree 1980 at the page 58.

Pakistan) speak Pashto, a language belonging to the oriental group of Iranian languages, which was recognized in 1936 as one of the two official languages of Afghanistan (the other being *Farsi*).

The existence of Pashtuns is first mentioned in 982 CE in the geographic treatise *Hodūd al-'Alam* (Minorsky 1937). This manuscript actually refers to those inhabiting West Pakistan in the area of the Suleiman Mountains, but it does not mean that other Pashtun groups were not already living in Afghanistan. Originally followers of the Iranian fire religions (Zoroastrism, Mazdeism, Manichaeism), all Pashtuns converted to Islam between the 7th and the 11th centuries as a consequence of the Arab conquests.

These days, the Pashtuns are grouped in two political confederations, called Durranis in the south (areas of Kandahar and Quetta) and Ghilzays in the east (areas of Nangarhar and Paktya). They are respectively composed of about ten main tribes (Alekozays, Alikozays, Andars, Atchazays, Barakzays, Ishakzays, Mohammedzays, Nurzays, Popalzays, and Sadozays) and by about eight main tribes (Ahmadzays, Hotakis, Ishakzays, Kharotis, Musakhêls, Suleymankhêls, Tarakis, and Zadrans). Some eastern tribes (Jajis, Kakars, Khogianis, Mangals, Safis, and Turis) as well as the Afridis, Shinwaris, Mohmands, and Waziris do not belong to such confederations (Lal 1846).

I herein provide a detailed picture of the social organization, because each Pashtun tribe (or clan) claims to descend from a single common male ancestor. This traditional belief might be genetically tested, even though the traditional habit of adoption, as well as the various conquests and tribal wars, are likely to complicate the picture.

We note that in the 19th century some British authors argued that the Pashtuns were the descendants of one of the ten lost tribes of Israel (Burnes 1834), but genetic research has still to find any evidence of such claim (Qamar et al 2002; Parfitt 2003). The political and religious group of the *Taliban* (literally, *students of religion*) is mainly, but not exclusively, constituted by Pashtuns.

The Persianophones

The Tajiks (PRS). The Tajiks represent about 25%–30% of the whole Afghan population. They are believed to be the most ancient inhabitants of Afghanistan (Masson and Romodin 1964–1965; Dupree 1973). They are a sedentary population of Persian tradition, spread almost all over the country. Different from Pashtuns, Tajiks are not organized in a tribal system. They are farmers, shopkeepers, civil servants, and artisans, and they name themselves by their region or valley of origin: Andarabis, Badakhchis, Heratis, Logaris, Panjcheris, Wakhis, etc., In Afghanistan, the Tajiks are generally known as *Farsiwan* (literally meaning: “who speak the Persian language”) because they speak *Farsi* (or *Dari*, the official name of the literary language). *Farsi* is also the language of the central administration, medias, traders, and it shares with Pashto the status of official language of Afghanistan.

Small ancient Tajiks groups (Pamiri Tajiks in Figure 1), different from each other and from the majority of other Tajiks can be found in the mountain valleys of Pamir in the Northeast provinces of Badakhshan and Wakhan (Kussmaul 1965). They speak archaic Iranian dialects, called Eshkashemi (SGL), Munji (MNJ), Rochani, Shughni (SGH), Yaghnobi, and Wakhi (WBL). These isolates would permit a more refined genetic analysis of the original Tajik settlers (main Tajiks are often mixed), even though a loss of genetic diversity might be expected.

The Aymaqs (AIQ). Living in the isolated mountains of west central Hindu-Kush and accounting for around 600,000 people, they are also called *Farsiwan* (speaking *Farsi*), in spite of the fact that the word used to identify them, *Aymaq*, is of Mongol origin. They do not call themselves in such a way, preferring to use toponyms related to the original location of their tribe: Taymûris (around the cities of Herat and Qala-e no), Jamchidis (north of Herat), Taymanis, and Ferozkohis (Mandersloot 1971). The kind of *Farsi* they speak contains many Turkish terms borrowed from neighboring populations. Different from the Tajiks (another *Farsiwan* people), they are endogamous and remain attached to their tribal affiliations. They have a semi-nomadic lifestyle and could be the descendants of the Ghorids, who had established an empire from Afghanistan to India in the 12th and 13th centuries.

The Baluchs (BGN). There are about 250,000 Baluchs in Afghanistan. They originally came from north of the Caspian Sea. Arab geographers reported their presence during the 10th century in the province of Seistan (south-west of Afghanistan, between Iran and Pakistan) where they still live in their majority. Some smaller groups live in the northwest of Afghanistan and in Turkmenistan (Pehrson 1966). The Baluchs speak an ancient Iranian language and share a semi-nomadic lifestyle (de Planhol 1993). Their tribal organization is very strong and differentiated, with most of them being from the Rakhshani tribe. They are all Sunni Muslims, even those living in Iran.

The Ormuris (ORU) and Paratchi (PRC). The Ormuris consist of only a few families, either living around the town of Baraki-Barak in the province of Logar or near Kaniguram in the province of Waziristan (Pakistan). They speak Ormuri, an ancient language that is nearly extinct, of the south-eastern Iranian group (Kieffer 1977). Until recent times, the Ormuris did not exchange wives with their neighbors, and their maternal lineages should be of interest. The Paratchi people, who speak a language of the same name, can still be found in only some isolated villages of the Patchaghan valley (district of Nijrab, Kapisa province) and in the Shutul valley (Parwan province).

The Hazaras (HAZ). The Hazaras live mainly in the fairly isolated mountainous regions of central Afghanistan and account for around 10% of the Afghans. They speak a Persian dialect, the Hazaragi. Because of an “Asiatic” facial morphology, it has often been suggested that the Hazaras might be the descendants of soldiers of the army of Genghis Khan. Genghis Khan had conquered the region between 1221 and 1227 CE after having unified various Central Asian tribes like the Mongols, the Turks, and the Tatars. They came as soldiers without families, and some of them could eventually have settled in the Afghan valleys and married local women. In this way, they might be part of the ethnogenesis of the Hazaras. If such unsupported beliefs had to be considered reliable, it should be pointed out that Genghis Khan’s cavalry-men were chosen among allied and conquered tribes and were likely to be genetically heterogeneous, meaning that the genetic roots of the Hazaras may be multiple (Qamar 2002). More likely, the Hazaras are the descendants of nomadic Turkish groups moving from the Altai to the West (Farhadi 2010). They could have been either the Huns Hephtalites (who annihilated the Kouchan empire in the 5th century), or the Tû-Kiue (a group that came to Afghanistan from the North in the 6th century), or even an admixed population having its roots in the various oriental Turkish groups forced to migrate elsewhere because of being “pushed” by the Mongol conquest.

Modern Hazaras use the district names corresponding to the area they inhabit (Jaghori, Behsud, Timuri, Day Tchopan, Day-Kundi, Day-Mirdad, Day-Zangi, Sheikh-Ali, and Yakaolang). We still do not know if they once formed well-constituted endogamic groups or if they admixed with groups of

ancient Iranian lineage established in the region since more distant times (Poladi 1989; Mousavi 1998; Monsutti 2005).

The most respected among the Hazaras, are the Seyyeds. Men wear a traditional black turban and can be easily identified. The Seyyeds claim to descend from the Prophet Mohammed and are strictly endogamous. A genetic study would certainly shed some light on their paternal lineage in order to verify any affiliation with those found in the Arabian Peninsula.

The Moghols (MHJ). Considered by cultural anthropologists as true descendants of Mongol groups (Schurmann 1962), the small group called locally “moghols” (Zerjal et al. 2003) speak a form of Mongol, mixed with Persian language (Iwamura 1961). They are established in 8 villages of western Afghanistan, located in the southeast of Herat city (villages of Kundur, Karez-e Molla, Burya-baf, Bêdawi, and Zimi). They are also found in the province of Maymana (Do-rodî and Morcha-gol villages) and near Obek, in the province of Ghor (Zaman-abad).

The “Turkish peoples.” Many different populations speaking languages of the Turco-oriental group live in Afghanistan, mainly in the Northern provinces (Jarring 1939). Until the military conquest in 1882 by Abd-ur Rahman, the founder of the modern Afghan state, they lived in small kingdoms, independent from the *emir* of Bukhara and from the Pashtun chiefs of southern Afghanistan (Krueger 1963; Toltova 1962–1963; Heywood 1998). Currently, smaller groups are located in well-defined districts, and were semi-nomads until quite recently: Qarakalpak (KAA), Kazakhs (KAZ), Qarluqs, Tatars, Türks near Herat, Mazar-i Sharif, and Kondozi cities; also Uygûris (UIG) in the Badakhshan province. They still remain attached to their tribal affiliations (Centlivres 1975).

The Uzbeks (UZS). The Uzbeks (approximately 10% of the whole population of Afghanistan) are probably among the descendants of the ancient Qipchak populations established in Central Asia and came from the North before the 16th century (Burnes 1834; de Clavijo 1928). Either nomadic or sedentary, they occupy the rich loess land of the northern plains from Maymana to Khanabad.

While not all of them may have a memory of their ancient tribal affiliations, some still identify themselves as members of tribes: Burka, Durmen, Kipchak, Lakay, Mangit, Ming, Muytan, Qattaghan, and Qungrat. At the end of the 19th century, the Uzbek kingdoms (Maymana, Sheberghan, Andkhoy, Balkh, Khulm, Kondozi, and Fayzabad) were annexed to the newly constituted Afghan nation, and Pashtun nomads were installed in these former kingdoms. The two populations would not normally intermarry (Irwin et al. 2010; Revazov et al. 1983).

The Afshars (AZB). The Afshars arrived in Afghanistan following the conquest of Nadir Shah in 1737 and have since always lived in the Chandawol

neighborhood of Kabul. Descendants of a Turkish speaking group, they belong to Shia Muslim branch (Ligeti 1957). Generally well educated, they soon became civil servants, soldiers, or bodyguards at Court and kept their identity. A genetic comparative study with Iranian populations would be possible in order to more precisely identify their roots.

The Turkmens (TUK). Turkmens (approximately 2% of the whole population) are probably the descendants of the ancient Oghûz tribes of Mongolia. The Oghûz were already in the 7th century organized as a federation of 24 clans established around the Aral Sea and the Caspian Sea. From the 10th century onward, they were converted to Islam (König 1962).

Turkmens speak a language belonging to the south-western group of the Turkish languages. The main stream of Turkmens arrived in Afghanistan between 1928 and 1933. They settled near Herat and along the left bank of the Amu-Daria River, between the towns of Andkhoy and Konoz. They still keep a tribal organization: the Tekkes (the dominant group in nearby Turkmenistan) near Herat, the Yomuds (numerous in east Iran), the Karas at Andkhoy, the Qarqins, the Ersaris who are the more numerous in Afghanistan, around Aqcha, and, finally the Alielis, Egdys, Chaudors, Göklens, Salors, and Saryks (Irons 1975).

Until 1884 and the takeover of Merv City by Russian troops, Turkmen living around the Aral Sea used to raid east Iranian villages, capturing peasants and selling them as slaves on the markets of Khiva and Bukhara. Genetic admixture has thus happened. Furthermore, being generally wealthy due to their successful carpet trade, they could sometimes afford having a second wife from neighboring villages not necessarily belonging to their own group.

The Kirghiz (KIR). Mainly living in the sovereign state of Kirghizstan and in the Pamirs Mountains across the Chinese border, there are only a few Kirghiz in Afghanistan. Their arrival from China is rather recent, before 1895 and around 1920 and 1949. Living the entire year at an altitude of 4000 m. in valleys accessible only in summer, they breed yaks and sheep (Dor 1975; Dor and Naumann 1978). Such geographic isolation might be of interest for demographers and geneticists to study recent drift and bottleneck phenomena with reference to Kirghiz living in Kirghizstan (Facchini et al. 1997; Gurgey et al. 2000). In 1979, a majority left for Pakistan as refugees, establishing in the area of Chitral. In 1982, they were given asylum in Kara Gündüz village of eastern Turkey, before commuting to larger cities. Those Kirghiz (estimated 2000) that remained in Afghanistan can be easily found in the Pamir area.

The “Indians”

The Brahuïs (BRH). The Brahuïs live in South-west Afghanistan, in Seistan and Registan. They belong to a very ancient population, having pre-Aryan roots

and maintain a strong cultural identity. They speak a Dravidian language of the family of southern India's ancient languages (region of Dekkan) and of the north of Ceylon. Linguists believe that their arrival chronologically precedes the one of the Baluchs. Traditionally desert nomads, they breed racing dromedaries.

The Pachays (AEE, GLH, PSI, PSH). This appellation groups the populations of various valleys in the provinces of Laghman, Konar, and Kapisa in the east of Afghanistan (Wutt 1980). They are the descendants of a Dardic indo-Aryan group and have been isolated until recent times. A different dialect is spoken in each valley, and mutual intelligibility is very low. Dardic dialects belonging to the same group are spoken in some other villages: Gawarbat (GWT) and Sawi (SDG) in the Konar valley. Tirahi (TRA) is still spoken by a small group of the same name in a few villages of Nangarhar province.

The Nurestanis. This interesting population inhabits four isolated mountain valleys in the northeast of the country. In each valley, Ashkun (ASK), Bashgal, Prasun (PRN) and Waygal (WBK), a different dialect is spoken. Such dialects, mutually understandable to some extent, are very ancient (Fussmann 1972). Both have Iranian and Indian features and are related to the ancient pre-Vedic language of India before it split into Indian and Iranian branches. Until the end of the 19th century when they became part of the Afghan kingdom, the Nurestanis lived in near total isolation, as they were not yet Muslims (Robertson 1896). To the eyes of anthropologists, they have a special interest as almost perfect cultural and geographical isolates. These days, it is impossible to reach the valleys as they have become strongholds of insurgents, both local and foreign.

The Gojurs (GJU). They are constituted by small groups of endogamous nomads of Indian origin. Generally sheep farmers, they speak a specific language, *Gojur*, and live in the highlands of the eastern provinces (Kapisa, Nangarhar) and in the northeast (Baghlan).

The Jats. *Jat* means caste in India. This term identifies small and marginalized groups of itinerant artisans of Indian origin. The Gorbats, a similar group originally coming from Iran, speak Persian (Rao 1982).

The Sikhs and the Hindus. In the 19th century, Sikhs and Afghans fought together for the possession of Peshawar, now capital of the eastern Pashtuns of Pakistan. From 1835 to 1843, the city was administered and beautified by Paolo Avitabile, the Italian lieutenant in the 1st infantry regiment of Napoleon, who became general in the army of Ranjit Singh, the Sikh king of Punjab.

Easily recognizable by their turbans, the Sikhs used to live in their majority in the south and east of Afghanistan (Kandahar, Kabul, Jalalabad, and Khost), where they were mostly shopkeepers, specialized in Indian tissues and jewels.

In the same way, 20,000 to 30,000 Hindus used to live in Afghanistan, as tissue traders in southern cities. In 1832, Alexander Burnes (1834) pretended that all commerce activities in Central Asia, from Astrakhan and Machhad to Calcutta, were in their hands.

After the Taliban takeover of 1994–1996, both the Hindus and the Sikhs had to leave Afghanistan, but some returned after 2001 and rebuilt their religious sites (Dupree 2001). Both Sikhs (new about 2000) and Indus speak Hindustani (HIN), Punjabi (PAN), Lahnda (LAH), or Sindhi (SND).

The Semites

The Arabs. Arabs groups had arrived in Afghanistan at the very beginning of the Arab conquest (7th – 11th centuries), and then again in 1366 CE from Syria and Iraq in the army of Tamerlan. Many had settled in the north of the Amu-Daria river (in Uzbekistan and Tajikistan) (Vinnikov 1940; Doerfer 1969) or in the ancient province of Bactriane (north of Afghanistan) where, currently, they can be estimated at more than 100,000 individuals. They are semi-nomads and breed cattle, are Sunnite Muslims and speak Persian (Barfield 1981).

Four isolated villages of Afghan Arabs (ABH) have kept their Arab language, though it is mixed with Persian terms, and they are strictly endogamous: Hassan-abad, north-east of Shiberghan, Sultan-aregh, near Aqcha, Yakh-dan, and Khoshhal-abad, near Dawlat-abad, Balkh province (Farhadi 1970). The communities living in these villages call themselves Qoresh Arabs, thus claiming a supposed belonging to the Qoresh tribe of the Prophet Mohammed (Sana 1975; Kieffer 1980; Dupaigne 1982). A genetic test may verify any possible relatedness, as according to their tradition, they came from Iraq after the conquest of Baghdad by Tamerlan in 1358 (Debec 1967).

The Jews. According to a very vague verse in the Bible (Zechariah 6:8), Jews could have lived in Afghanistan in the region of Khorasan (“Land in the North”) (Fischel 1945; Goldstein 2010). Concerning ancient times, nothing else is known besides an interesting oral tradition handed down in Kabul by Alexander Burnes (1834) claiming that, after the destruction of Jerusalem, a Jewish tribe was deported by Nabuchodonosor II, king of Babylon, to the province of Ghor in 587 BCE. Such tradition is somewhat corroborated by the finding, in a cemetery near Jam (Ghor province), of graves with Jewish inscriptions, dated from 1012 to 1249 CE, that is at the time of the Ghor empire that collapsed in the 13th century (Bruno 1963; Gnoli 1964). After that, it is likely that they moved elsewhere, but it is impossible to know if they left any descendants. Other Jews arrived in Herat from Mashhad (city east of Iran) in 1839 escaping massacres. After the soviet revolution, starting in 1924, many other Jews came to Afghanistan from different areas of Central Asia, namely the cities of Khiva, Bukhara, and Samarkand. At the beginning of the 20th century, Herat still hosted an important Jewish

Persian-speaking community, while smaller groups could be found in Bala Morghab, Qala-e No, Maymana, Andkhoy, Kandahar, and Kabul.

Starting in 1951, many Jews left Herat for Israel or the United States, and a complete emigration took place in 1978 after the communist takeover. Today, there is only one Jew left in Afghanistan, the guardian of the synagogue in Kabul.

To sample DNA from Jews of Afghan ancestry, a researcher should contact the numerous (approximately 15) Afghan synagogues located in Israel, mainly in Tel-Aviv, or the Afghan synagogue in New York City. Also, a “bukhariot” quarter, created in 1892 and called Rehovoth, exists in Jerusalem, and Afghan Jews live close to it (Bar’am-Ben Yossef 1998).

Received 7 September 2011; revision accepted for publication 6 October 2011.

BERNARD DUPAIGNE

National Museum of Natural History
Paris, CNRS UMR 7206
Paris, France

Literature Cited

- Agarwal, D. P., H. W. Goedde, H. G. Benkmann et al. 1976. Genetic polymorphism of C3 and serum levels of immunoglobulins, C3, C4 components of complement and C3-proactivator in four different populations of Afghanistan. *Hum Genet.* 33(1):67–72.
- Bar’am-Ben Yossef, N., ed. 1998. *Brides and Betrothals. Jewish Wedding Rituals in Afghanistan.* Jerusalem, The Israel Museum.
- Barfield, T. J. 1981. *The Central Asian Arabs of Afghanistan. Pastoral Nomadism in Transition.* Austin, TX: University of Texas Press.
- Barfield, T. J. 2011. *Afghanistan: a cultural and political history.* Princeton, N. J.: The Princeton University Press.
- Bellew, H. W. 1880. *The Races of Afghanistan.* Calcutta, India: Thacker, Spink and Co.
- Benkmann, H. G., H. W. Goedde, D. P. Agarwal, et al. 1980. Properdin factor B polymorphism in Afghanistan. *Hum Hered.* 30(1):39–43.
- Berti, A., F. Barni, A. Virgili et al. 2005. Autosomal STR frequencies in Afghanistan population. *J Forensic Sci.* 50(6):1494–1496.
- Bruk, S. I. 1955. Etniceskij sostav stran Perednej Azii. *Sovetskaja Etnografija:* 66–81.
- Bruno, B. 1963. Notes on the discovery of Hebrew inscriptions in the vicinity of the Minaret of Jām. *East and West.* 14:206–208.
- Burnes, A. 1834. *Travels into Bokhara.* London, England: J. Murray.
- Caroe, O. 1958. *The Pathans. 550 BC-AD 1957.* London, England: MacMillan & Company.
- Centlivres, P. 1975. Les Uzbeks du Qattaghan. *Afghanistan Journal.* 2/1:28–36.
- Centlivres, P., and M. Centlivres-Demont, 1988. *Et si l'on parlait de l'Afghanistan?* Neuchatel, Switzerland: Institut d'ethnologie; Paris: Maison des Sciences de l'Homme.
- de Clavijo, R. G. 1928. *Embassy to Tamerlane 1403–1406 (The Broadway Travelers).* G. Le Strange, trans. E. D. Ross and E. Power, eds. London, England: Harper Brothers.
- de Planhol, X. 1993. *Les Nations du Prophète. Manuel géographique de politique musulmane.* Paris, France: Fayard.
- Debec, G. F. 1967. Antropologičeskie issledovanija v Afganistane. *Sovetskaja Etnografija.* 4:75–93.
- Doerfer, G. 1969. Die Özbekischen Lehnwörter in der Sprache der Araber von Buchara. *Central Asiatic Journal,* XII. 4:296–308.

- Dor, R. 1975. *Contribution à l'étude des Kirghiz du Pamir afghan*. Paris, France: Publications Orientalistes de France.
- Dor, R., and C. M. Naumann. 1978. *Die Kirghisen des Afghanische Pamir*. Graz, Austria: Akademische Druck- u. Verlagsanstalt.
- Dupaigne, B. 1982. Les Arabes arabophones d'Afghanistan. In *Le cuisinier et le philosophe. Hommage à Maxime Rodinson*. Paris, France: G. P. Maisonneuve et Larose: 89–96.
- Dupaigne, B., and G. Rossignol, 2002. *Le carrefour afghan*. Paris, France: Gallimard.
- Dupree, L. *Afghanistan*, 1973. Princeton, NJ: Princeton University Press.
- Dupree, N. H. 2001. L'histoire des Hindous afghans. *Les Nouvelles d'Afghanistan*. 9:20–23.
- Facchini, F., D. Pettener, A. Rimondi et al. 1997. Taste sensitivity to PTC and thyroid function (FT4 and TSH) in high- and low-altitude Kirghiz populations in the Pamir. *Hum. Biol.* 69(1):97–106.
- Farhadi, R. 1970. Languages. *The Kabul Times Annual*. 121–124.
- Farhadi, R. 1969. Die Sprachen von Afghanistan. *Zentralasiatische Studien*. 3:409–416.
- Farhadi, A. G. R. 2010. Les Hazaras en Afghanistan. In *Paysages du centre de l'Afghanistan. Paysages naturels, paysages culturels. Hindou-Kouch ; lacs de Band-e Amir, vallée de Bamiyan*. Paris, France: Ceredaf. 200–203.
- Fischel, W. J. 1945. The Jews of Central Asia (Khorasan) in medieval Hebrew and Islamic literature. *Historia Judaica* VII. 29–50.
- Fussmann, G. 1972. *Atlas linguistique des Parlers Dardes et Kafirs. Cartes et commentaires*. Paris, France: École française d'Extrême-Orient.
- Gille E, ed. 1984. *Afghanistan, la colonisation impossible*. Paris, France: Editions du Cerf.
- Gnoli, G. 1964. *Le iscrizioni giudeo-persiane del Gâr (Afghanistan)*. Rome, Italy: Istituto per il Medio ed Estremo Oriente.
- Goedde, H. W., G. Flatz, A. G. Rahimi et al. 1977a. The acetylator polymorphism in four populations of Afghanistan. *Hum. Hered.* 27(5):383–388.
- Goedde, H. W., H. G. Benkmann, G. Flatz et al. 1977b. Red cell enzyme polymorphisms in different populations of Afghanistan. *Ann. Hum. Biol.* 4(3):225–232.
- Goldstein, D. B. 2010. *L'héritage de Jacob. L'histoire des Juifs à travers le prisme de la génétique*, Paris, France: Denoël.
- Gurgey, A., D. K. Kudayarov, M. Tuncer et al. 2000. The factor V Leiden and prothrombin G20210A mutations in Kirghiz population. *Thromb. Haemost.* 84(2):356.
- Heywood, C. 1998. *The Turks. (Peoples of Asia)*. Oxford, England: Blackwell Publishing.
- Hirth, L., H. G. Benkmann, and H. W. Goedde. 1979. The distribution of human Gm-globulin and Inv-allotypes in populations of Egypt, Saudi-Arabia, Afghanistan and Ecuador. *Z. Morphol. Anthropol.* 70(2):174–180.
- Hirth, L., H. G. Benkmann, and H. W. Goedde. 1982. Supplementation and extension of the paper. "The distribution of human Gm-globulin and Inv-allotypes in populations of Egypt, Saudi-Arabia, Afghanistan and Ecuador published in *Z. Morph. Anthropol.* 70, 2, 174–180 (1979). *Z. Morphol. Anthropol.* 73(1):107–108.
- Hohoff, C., M. Schürenkamp, T. Börchers et al. 2006. Meiosis study in a population sample from Afghanistan: allele frequencies and mutation rates of 16 STR loci. *Int. J. Legal Med.* 120(5):300–302.
- Irons, W. 1975. *The Yomut Turkmen: a study of social organization among a Central Asian Turkic-speaking population*. Ann Arbor, MI: Museum of Anthropology, University of Michigan.
- Irwin, J. A., A. Ikramov, J. Saunier et al. 2010. The mtDNA composition of Uzbekistan: a microcosm of Central Asian patterns. *Int. J. Legal Med.* 124(3):195–204.
- Iwamura, S. 1961. *The Zirni manuscript: a Persian-Mongolian glossary and grammar*. Kyoto, Japan: Kyoto University, Results of the Kyoto University Scientific Expedition to the Karakoram and Hindukush.
- Jarring, G. 1939. On the distribution of Turk tribes in Afghanistan: an attempt at a preliminary classification. In *Lunds Universitets Arrsskrift NF AVD 1, Band 35, Nr. 4*: Otto Harrassowitz: Lund-Liepzig.

- Kieffer, C. M. 1977. The approaching end of the relict South-East Iranian languages Ormuri and Paraci in Afghanistan. *International Journal of the Sociology of Language*. 12:71–100.
- Kieffer, C. M. 1980. L'arabe et les Arabophones de Bactriane (Afghanistan): I. Situation ethnique et linguistique. *Die Welt des Islams, International Journal for the Study of Modern Islam*. 20;(3–4):178–196.
- König, W. 1962. *Die Achal-Take. Zur Wirtschaft und Gesellschaft einer Turkmenen-Gruppe in XIX Jahrhundert*. Berlin, Germany: Akademie Verlag.
- Krueger, J. R. 1963. *The Turcic peoples. Selected Russian entries from the Great Russian Encyclopedia*. Bloomington, IN: Indiana University Press.
- Kusmaul, F. 1965. Badakhshan und seine Tagiken. *Tribus*. 14:11–99.
- Lal, M. 1846. *Life of the Amir Dost Mohammed Khan of Kabul*. London, England: Longman, Brown, Green and Longmans.
- Lewis, M. P., ed. 2009. *Ethnologue: Languages of the World*. 16th ed. Dallas, TX: SIL International. Web version: www.ethnologue.com.
- Ligeti, L. 1957. Sur la langue des Afchars d'Afghanistan. *Acta Orientalia Hungarica*. VII:109–159.
- Mandersloot, G. 1971. *Firuzkoti. Een afgaans reisjournal*. Rotterdam: Museum voor Land-en Volkenkunde.
- Masson, V. M., and V. A. Romodin. 1964–1965. *Istoriya Afghanistana*. Moscou.
- Minorsky, V. (trans.) 1937. Houdoud al' Alam. *The Regions of the World. An Anonymous Persian Geography*. London, England: Oxford University Press.
- Monsutti, A. 2005. *War and Migration: Social Networks and Economic Strategies of the Hazaras of Afghanistan. (Middle East Studies: History, Politics & Law)*. London, England: Routledge.
- Mousavi, S. A. 1998. *The Hazaras of Afghanistan: An Historical, Cultural, Economic and Political Study*. Basingstoke, Hampshire, U.K.: Palgrave Macmillan.
- Orywal, E., ed. 1983. *Afghanistan: ethnischen gruppen*. Wiesbaden: Ludwig Reichert, Verlag.
- Orywal, E., ed. 1986. *Tübinger Atlas des Vorderen Orients*. Wiesbaden: Ludwig Reichert Verlag.
- Parfitt, T. 2003. *The Lost Tribes of Israel. History of a Myth*. New Haven, CT: Phoenix Press.
- Pehrson, R. N. 1966. *The Social Organisation of the Mari Baluch*. Viking Fund Publication in Anthropology, Wenner-Gren Foundation, Chicago, IL: Adline Publishers.
- Poladi, H. 1989. *The Hazaras*. Stockton, CA: Mughal Publications.
- Qamar, R., Q. Ayub, A. Mohyuddin et al. 2002. Y-chromosomal DNA variation in Pakistan. 2002. *Am. J. Hum. Genet.* 70:1107–1124.
- Rahimi, A. G., H. W. Goedde, G. Flatz et al. 1977. Serum protein polymorphisms in four populations of Afghanistan. *Am. J. Hum. Genet.* 29(4):356–60.
- Rao, A. 1982. *Les Gorbat d'Afghanistan. Aspects économiques d'un groupe itinérant "Jat"*. Paris: eds. ADPF/Institut Français d'Iranologie de Téhéran.
- Revazov, A. A., A. Asanov, I. N. Lunga et al. 1983. Frequencies of ABO system blood groups and haptoglobins in Uzbekistan. The problems of sampling studies. *Genetika*. 19(7):1193–1197.
- Robertson, G. S. 1896. *The Kafirs of the Hindu-Kush*. London, England: Lawrence & Bullen.
- Sana, S. 1975. Les Arabes (arabophones) dans un milieu turcophone de la Bactriane (Afghanistan). In *L'acculturation turque dans l'Orient et la Méditerranée. Emprunts et apports*. Paris, Colloque international du CNRS:8.
- Schurmann, H. F. 1962. *The Mongols of Afghanistan. An Ethnography of the Moghols and Related Peoples in Afghanistan*. The Hague: Mouton.
- Toltova, S. P., S. M. Abramzona et al. 1962–1963. *Narody Srednej Azii i Kazakhstana*. Moscou.
- Vinnikof. 1940. Les Arabes en URSS. *Sovetskaja Etnografija*. IV.
- Wilbert, D. N. 1962. *Afghanistan*. New Haven, CT: HRAP Press.
- Wilbert, D. N. 1968. *An Annotated Bibliography of Afghanistan*. New Haven, CT: HRAP Press.
- Wutt, K. 1980. *Pashai. Landschaft. Menschen. Architektur*. Graz: Akademische Druck- u. Verlagsanstalt.
- Zerjal T., Y. Xue, G. Bertorelle et al. 2003. The genetic legacy of the Mongols. *Am. J. Hum. Genet.* 72(3):717–721.

Instructions for Contributors

Editorial Focus

Human Biology publishes original scientific articles, brief communications, letters to the editor, review articles, and book and software reviews on the general topic of biological anthropology. Our main focus is understanding human biological variation and human evolution through a broad range of approaches.

Human Biology is the official publication of the American Association of Anthropological Genetics (AAAG) (<http://aaag.sfbgenetics.org/>), an educational and scientific organization founded in 1994. AAAG aims to promote the study of anthropological genetics, as this field is broadly defined, to facilitate communication between individuals engaged in the study of anthropological genetics and to foster cooperation among anthropological geneticists.

We encourage investigators to submit any study on human biological diversity presented from an evolutionary or adaptive perspective. Priority will be given to interdisciplinary studies that seek to better explain the interaction between cultural processes and biological processes in our evolution. Methodological papers are also encouraged. Any computational approach intended to summarize cultural variation is encouraged. Studies that are essentially descriptive or concern only a limited geographic area are acceptable only when they have a wider relevance to understanding human biological variation.

Manuscripts may cover any of the following disciplines, once the anthropological focus is apparent: human population genetics, evolutionary and genetic demography, quantitative genetics, evolutionary biology, ancient DNA studies, biological diversity interpreted in terms of adaptation (biometry, physical anthropology), and interdisciplinary research linking biological and cultural diversity (inferred from linguistic variability, ethnological diversity, archeological evidence, etc.). Studies with a medical or epidemiological focus are discouraged.

Submitting a Manuscript

Manuscripts should be submitted by e-mail to human.biology@mnhn.fr. For other mailing needs, the address of the editorial office is *Human Biology*, c/o Nancy Wise, Musée de l'Homme, 17 place du Trocadéro, 75116 Paris, France.

Submissions should consist of a "cover letter" to the executive editor (Franz Manni) and a *single* PDF file. The PDF file must include a title page, an abstract, the full text of the article, the reference section, and the tables and figures and corresponding captions (please see the Manuscript Organization section for more details). Although a PDF is the preferred format for submission and review, a Microsoft Word document will be required for the final revised manuscript.

Editorial Process

All submitted articles go through a two-stage review. A first selection (prereview) is made by the editors on the basis of the abstract only. Manuscripts that are not within the focus of the journal or that are otherwise inappropriate will be rejected at this stage; otherwise, manuscripts are forwarded to researchers familiar with the particular subject area for a specialized review. After a paper is reviewed, it is returned to the author for revisions (if necessary) or rejected. Authors whose papers are accepted will need to sign a copyright transfer agreement. We cannot publish papers without the signed form. Once a paper has been accepted and an issue assigned, it will be copyedited according to the style of the journal, which incorporates elements of style from various standard style manuals (e.g., the *Chicago Manual of Style*). The copyedited manuscripts are then typeset. The journal reserves the right to charge authors for part of the costs involved in publishing long articles or those containing much tabular material. Authors will receive page proof, which they are to proofread carefully and return promptly.

Manuscript Organization

General. Authors should submit their revised manuscript as a Microsoft Word document (Word 2003 or earlier version; if you are using Word 2007, please save the file as a Word 2003 document). The manuscript should be double-spaced throughout, including the author affiliations, the Literature Cited, the figure captions, and the tables. The article should follow the style of *Human Biology* and should be written concisely.

The manuscript should be organized as follows. The first page should be a *title page*, including the title of the paper, authors' names, complete authors' affiliations, and key words.

The second page should contain the *abstract* of the paper (500 words maximum). The abstract should give a summary of the article and not be merely descriptive of it. For example, state the results and the conclusions; do not use such phrases as "The results are discussed in terms of epidemiology." The prereview made by the editors is based solely on the abstract and title; therefore the abstract should be exhaustive and informative.

On the third page of the manuscript you should start the actual text. The text should contain the following sections: an *introduction* (untitled) outlining the background of your topic and stating your purpose in writing the present article; the *materials and methods* (the study population, statistical methods, measurement methods, etc.); the *results*; and a *discussion*, followed by a *perspectives* section, if needed. After the main text of your article, you should include a complete list of *Literature Cited*. In the text, you should cite references by author and date. In the Literature Cited section references should be in alphabetical order by author. The Literature Cited should include all references cited in the text, figure captions, and tables. Please do not pad your list with papers you do not cite. Following the Literature Cited section are the tables and the figure captions.

References. Each reference in the Literature Cited section should be complete. For journal articles this means that you should include the names of the first three authors (and then “et al.” to indicate more than three authors), date, title of article, journal title (abbreviated according to *Index Medicus*, or spelled out completely if the journal is not listed in the *Index*), volume number, and inclusive page numbers.

Example Smith, J. 2008. Distribution of haplogroups in Indian populations. *Hum. Biol.* 90:1–15.

For chapters in a book you must list the names of the first three authors, date, title of chapter, title of book, editors of book, publisher and its location (city and state if in the United States; city and country otherwise), volume number if necessary, and inclusive page numbers.

Example Jones, M. 2008. Overview. In *Distribution of Haplogroups in India*, J. Smith and N. Brown, eds. Detroit, MI: Wayne State University Press, 1–22.

If you are referencing an entire book, include the names of the first three authors (or editors), date, title, and publisher and its location.

Example Smith, J., and N. Brown, eds. *Distribution of Haplogroups in India*. Detroit, MI: Wayne State University Press.

Other types of references (technical reports, dissertations, etc.) should always include as much information as possible: the names of the first three authors (sometimes the author might be a corporation or an organization), date, title, publishing organization and its location, number of report, name of university and its location, series designation, etc. Articles appearing in conference proceedings should be treated as chapters in a book; that is, you should list the names of the first three authors, date, title of article, title of conference proceedings book (not the name of the conference, where it was held, and on what date), editors of the proceedings, publisher (probably the organization that sponsored the conference) and its location, and volume and page numbers.

Tables. You should place the tables after the Literature Cited section. Each table should be placed on a separate page, double-spaced, in *Human Biology* style. Use the table function in Word if at all possible (if you cannot use the table function, then use tabs between entries to make the columns; do not insert a series of spaces). Do not use vertical or slant rules. Keep in mind that the table should not contain more columns of data than will fit on a printed page turned sideways. The tables should be numbered sequentially in the order they are to appear. Make sure that each table is cited in the text in sequential order. Each column should have a heading, and all units should be clearly marked (% , cm, etc.).

Figures and Figure Captions. After the tables should be a list of figure captions. Because the figure captions are typeset, they should not be part of the

actual illustrations. They should be placed on a separate page as you would the text, that is, double-spaced. You do not have to use a separate page for each caption. All illustrations should be in black and white and numbered sequentially. Keys and other internal matter should be lettered on the figure, or if possible, included in the figure caption.

Submit clear and readable originals of line drawings in addition to a PDF or jpeg files containing only the figures. Photocopies of figures are not acceptable. You should submit high-quality laser printer copies. Photographs should be clear, sharp, and of high contrast. They should be printed on glossy paper. Please keep in mind that your figures will probably be reduced to fit the journal page. Thus make sure that all lettering and symbols will be able to withstand substantial reduction and still be legible. The Press does not alter figures. Therefore what you submit is what is printed. It is to your benefit—and your readers’—to present the highest-quality figures.

Style Notes

It is the style of *Human Biology* to use the Human Gene Mapping Workshop nomenclature for genetic systems. This nomenclature system and its terminology are explained by Shows et al. in their article “Guidelines for Human Gene Nomenclature: An International System for Human Gene Nomenclature (ISGN, 1987)” [*Cytogenet. Cell Genet.* 46:11–28 (1987)]. In addition, the abbreviations for specific alleles, enzymes, markers, etc. are given by McAlpine et al. [“Report of the Nomenclature Committee and the 1989 Catalog of Mapped Genes,” *Cytogenet. Cell Genet.* 51:13–66 (1989)]. It is also the style of the journal to use metric units. In addition, symbols, diacritical marks, and other unusual characters should be clearly marked on the manuscript. Also be sure to distinguish between the number “1,” the letter “l,” and the letter “I” if you are using a sans serif typeface.

Application of Genomics to Anthropological Research (AGAR) Workshop

Dates: Monday, January 9–Tuesday, January 10, 2012

Location: The Texas Biomedical Research Institute, San Antonio, Texas

Organizers: The American Association of Anthropological Genetics (Education Committee) in collaboration with the Texas Biomedical Research Institute

The AGAR Workshop aims to provide students and scholars from the anthropological field with a substantial background in applications of the most state-of-the-art technologies used in genomic investigations. The workshop will be led by experts from the field of genomics, who will instruct and interact with participants in both casual and semi-formal settings.

Specifically, the workshop will comprise (1) keynote lectures from leaders in anthropological genomics, (2) formal presentations describing general as well as anthropology-specific applications of genomic tools, (3) Q&A sessions that address the practical issues of genomic research, (4) informal chalk-talk sessions in which the participants can discuss their own projects, and (5) social events to foster possible collaborations and contacts.

The overall goal of this workshop is to provide anthropologists previously unfamiliar with the field of genomics sufficient knowledge to apply genomic tools to their future research.

Tentative Schedule of Events

Day 1 Monday: Arrival

7:00–7:30 p.m.: Workshop introduction

7:30–10:00 p.m.: Mixer

Day 1–Monday: Methodological issues regarding genomic applications

9:00–10:30 a.m.: Introduction to next generation sequencing

General introduction to different sequencing platforms and basic methodological concepts, such as read-depth, read-pairs, library construction (and tagging), read-length, etc.

10:30 a.m.–12:00 p.m.: Calling variants: SNPs, indels and structural variation a regarding next-generation sequencing

A comparison of Sanger sequencing, microarray data (SNP, copy number variants, etc.) and other next-generation sequencing techniques. This session will also feature information on controls, quality checks, false-positive rates.

12:00–1:00 p.m.: Lunch

1:00–2:30 p.m.: Large scale analyses of the sequencing data

Analyses of genomic sequence data within the context of association studies and population genetics.

2:30–3:30 p.m.: Exome sequencing and human adaptation

This session will discuss techniques array capture and exome sequencing to identify adaptive variation in the genome.

3:30–4:30 p.m.: Ancient genomics

This session will focus on technical issues regarding extracting ancient DNA, preparation of large-scale genome libraries, sequencing and interpretation of the data.

4:30–5:30 p.m.: Structural variation

Introduction to different types of genomic structural variations, including copy number variants (CNVs) with an emphasis of methods of “discovering” and “genotyping” such variations using next generation tools.

6:00–8:00 p.m.: Dinner featuring plenary talk

8:00–10:00 p.m.: Mixer

Day 2– Tuesday: Applications of genomic tools to anthropological questions

10:00 a.m.–12:30 p.m.: Chalk-talk discussions of potential anthropological genomic projects

Here, the group will discuss 3 possible research questions and projects suggested by the participants, and provide advice on how to design and optimize such projects.

12:30–1:30 p.m.: Lunch

1:30–2:30 p.m.: In depth analyses of population history

In this session we will discuss how whole-genome sequencing data can be used to capitalize on recently developed methods that exploit population genetic theory to infer historical parameters such as divergence times, population sizes, and migration rates as well as perform model testing.

2:30–3:30 p.m.: Pathogens and genome evolution

Pathogens have played a critical role in human evolution, thus revealing their evolutionary dynamics may provide novel insights into the history of modern human populations. This session will focus on how unique features of human pathogen data may be utilized to study important events and behaviors in human evolution.

3:30–4:30 p.m.: Comparative genomics and primate genomics

Methods, challenges, and future directions in large-scale comparison of primate genomes within and across species using next-generation sequencing.

4:30–5:00 p.m.: Concluding remarks

Registration: Registration is open to all interested parties, though it will be limited to 40 participants. Fees are \$100 for students, \$150 for postdoctoral fellows, and \$200 for faculty and other professionals. Fees will cover lunches, dinner, and a mixer. Fees do not include travel or accommodations, though reservation blocks will be held at local hotels. To register, please visit www.anthgen.org/AGAR_registration.html

Deadline: The deadline for registration is November 30, 2011.

Student Awards: A limited number of student awards are available to cover the registration fee. Award details can be found at www.anthgen.org/AGAR_student_awards.html.

Contact: For more information, please contact gokcumen@gmail.com to subscribe to the workshop email listserve.

Organizer Information:

AAAG Education Committee

Omer Gokcumen, Ph.D. (*chair*)

Brigham & Women's Hospital and Harvard Medical School

Paul L. Babb

Department of Anthropology

University of Pennsylvania

Krishna Veeramah, Ph.D.

University of Arizona

Andrew Kitchen, Ph.D.

Department of Biology

Penn State University

2012 AAAG Membership

Membership is from January 1–December 31 of each year, which may or may not match the period of your journal subscription. To join or renew an existing membership please visit our website, or return this form with your check for the appropriate membership fee to:

Dr. Diane M. Warren
AAAG Secretary-Treasurer
Department of Anthropology
University of Oklahoma
455 W. Lindsey Ave., DAHT 521
Norman, OK 73019

Categories of membership (please circle appropriate category):

Membership categories (please check the appropriate category):

- Full member without journal subscription \$20
- Student member without journal subscription \$10
- Full member with electronic *Human Biology* subscription . . . \$105.20
- Full member with print *Human Biology* subscription, US shipping. . . \$105.20
- Full member with print *Human Biology* subscription,
international shipping \$192.20**
- Full member with electronic + print *Human Biology*
subscription, US shipping \$111.80
- Full member with electronic + print subscription, international
shipping \$198.80**
- Student member with electronic *Human Biology* subscription \$39.40
- Student member with print *Human Biology* subscription,
US shipping \$39.40
- Student member with print *Human Biology* subscription,
international shipping \$126.40**
- Student member with electronic + print *Human Biology*
subscription, US shipping \$46
- Student member with electronic + print subscription,
international shipping \$133*

**Includes \$87 international shipping charge.

Member information (please complete all categories):

Name: _____

Email address: _____

Mailing address: _____

Index to Volume 83

- “About Face: German Physiognomic Thought from Lavaer to Auschwitz” (book review), 561–564
- Abu-Rmeileh, N. M. E., 523–530
- Ackerman, E., 55–70
- Adger, D., 141–151
- adipokines, 531–559
- admixture, 337–344, 509–521
- affinal terminology, 107–128, 129–135
- “Afghan Genetic Mysteries” Letter to the Editor, 735–746
- Africa, 477–489
- African ancestry, 637–644
- African descent, 627–636
- “Afro-Derived Amazonian Populations: Inferring Continental Ancestry and Population Substructure,” 627–636
- aging, 531–559
- aleuts, 337–344
- allele – 13910*T, 379–392
- “Allele Frequency Estimation from Ambiguous Data: Using Resampling Schema in Validating Frequency Estimates and in Selective Neutrality Testing,” 437–447
- Alu* elements, 213–245
- Alu* insertion polymorphism, 611–626
- Alves, I., 13–38
- Amazon, 627–636
- ambiguous data, 437–447
- American Association of Anthropological Genetics (AAAG), 751
- membership, 658
- workshop, 655–657
- Amorim, C. E. G., 509–521
- Amoruso, I., 393–404
- Anabaptist, 599–609
- anatomically modern humans, 477–489
- ancestral genomes, 345–361
- ancestry, 659–684
- Ancestry Informative Markers (AIMs), 627–636
- Anglo-Saxons, 715–733
- Angola, 13–38
- “Application of Genomics to Anthropological Research (AGAR) Workshop,” 655–657
- apportionment, 659–684
- approximate Bayesian computation methods, 637–644
- “Are Languages Really Independent from Genes? If Not, What Would a Genetic Bias Affecting Language Diversity Look Like?” 279–296
- Arroyo Barahona, E., 345–361
- articulation, 191–212
- auditory cortex, 175–189
- auditory processing, 175–189
- Austerlitz, F., 379–392
- Austroasiatic, 405–435
- “The Austroasiatic Munda Population from India and its Enigmatic Origin: A HLA Diversity Study,” 405–435
- Austronesian, 297–321
- Baldwin effect, 247–259
- Bantu expansions, 13–38
- Barbujani, G., 477–489
- Barreto, I., 55–70
- Basques, 455–475, 685–694
- Beckers, G. J. L., 191–212
- Belgae, 715–733
- Benammar-Elgaaied, A., 611–626
- Bering Island, 337–344
- Bernasovská, J., 599–609
- Bernasovský, I., 599–609
- Bertoni, B., 55–70
- biodemography, 509–521
- “Biological Adaptations for Functional Features of Language in the Face of Cultural Evolution,” 247–259
- “Bird Speech Perception and Vocal Production: A Comparison with Humans,” 191–212

- birdsong, 141–151, 191–212
 bitter taste, 363–377
 Blell, M., 71–86
 Body mass index (BMI), 71–86, 523–530
 Bondioli, L., 695–713
 “The Border Effect in Surname Structure: An Italian-Slovenian Case Study,” 393–404
 Boronová, I., 599–609
 Bôžiková, A., 599–609
 Brady, J., 71–86
 brain imaging, 175–189
 Brazier, L., 379–392
 Britons, 715–733
 Brown, W. M., 213–245
- call combinations, 153–173
 Caravello, G., 393–404
 Carneiro dos Santos, N. P., 627–636
 Carnogurská, J., 599–609
 Castro de Guerra, D., 345–361
 centenarians, 531–559
 Central Asia, 379–392
 Chater, N., 247–259
 Cherni, L., 611–626
 Cheshire, J., 573–598
 chimpanzee, 175–189
 Christiansen, M. H., 247–259
 clustering, 659–684
 Coelho, M., 13–38
 Coevolution, 247–259
 communication, 175–189
 “Communication and the Primate Brain: Insights from Neuroimaging Studies in Humans, Chimpanzees and Macaques,” 175–189
 comparative, 175–189
 comparative approach, 191–212
 computer models, 279–296
 consensus clustering, 573–598
 Contijo, C. C., 509–521
 cooperation, 213–245
 craniometrics, 491–507
 Crawford, M. H., 455–475
 cultural evolution, 141–151, 297–321
 cultural hitchhiking, 213–245
 cultural phylogenetics, 87–105, 107–128, 129–135
 cytokines, 531–559
- Damasceno, A., 13–38
 Davis, M. C., 685–694
 deciduous teeth, 695–713
 Dediu, D., 279–296
 Deka, R., 455–475
 “Delineating Europe’s Cultural Regions: Population Structure and Surname Clustering,” 573–598
 delivery mode, 695–713
 Demarchi, D. A., 491–507
 dental enamel structure, 695–713
 Destro-Bisol, G., 637–644
 domain-specificity, 261–278
 “Drafting Human Ancestry: Does the Neanderthal Genome Tell Us about Hominid Evolution? Commentary on Green et al (2010),” 1–11
 Dupaigne, B., 735–746
- Egaña, A., 55–70
 elderly, 531–559
 electrophysiology, 175–189
 Ennaffaa, J., 611–626
 environment, 491–507
 errata, 331, 449, 565
 Europe GIS, 573–598
 evolution, 175–189, 191–212
 evolution of language, 323–329
 Ewens-Watterson Neutrality Testing, 437–447
 expectation-maximization (EM), 437–447
- Fabra, M., 491–507
 Falcão-Alencar, G., 509–521
 Fedurek, P., 153–173
 Figueiro, G., 55–70
 Figuera Pérez, C., 345–361
 Fitch, W. T., 323–329
 fMRI, 175–189
 formant, 191–212
 Fortunato, L., 87–105, 107–128, 129–135

- frequency estimation, 437–447
 Frigi, S., 611–626
 functional reference, 153–173
- Gabriková, D., 599–609
 gathering, 363–377
 “Gender Differences in Ancestral Contribution and Admixture in Venezuelan Populations,” 345–361
 gene-culture coevolution, 141–151, 213–245
 gene-flow, 509–521
 “Genes, Language, Cognition, and Culture: Towards Productive Inquiry,” 323–329
 genetic biasing, 279–296
 genetic distances, 477–489
 genetic drift, 337–344
 genetic epidemiology, 637–644
 “Genetic Homogeneity Across Bantu-Speaking Groups from Mozambique and Angola Challenges Early Split Scenarios between East and West Bantu Populations,” 13–38
 genetic structure, 55–70
 genetic studies of functional variants, 637–644
 genetic variation, 363–377, 637–644
 genetics, 531–559
 genome diversity, 477–489
 “Genomic Evidence for an African Expansion of Anatomically Modern Humans by a Southern Route,” 477–489
 genomic imprinting, 213–245
 “Geographic Patterns of Craniofacial Variation in Pre-Hispanic Populations from the Southern Cone of South Africa,” 491–507
 Georges, M., 379–392
 Germani, 715–733
 gestation length, 695–713
 “Gestation Length, Mode of Delivery, and Neonatal Line-Thickness Variation,” 695–713
 Ghiretto, S., 477–489
 Gignoux, C., 13–38
 glossogeny, 323–329
 Godinho, N. M. O., 509–521
 Guerreiro, J. F., 627–636
 Haban, 599–609
 Hammer, M. F., 39–53
 Hampikian, G., 685–694
 haplotypes, 455–475
 Hegay, T., 379–392
 heterozygosity, 659–684
 Heyer, E., 379–392
 Hidalgo, P. C., 55–70
 “Historical Sketch of Slovak Haban (Hutterite) Population Based on Autosomal STR Analysis,” 599–609
 HLA, 405–435, 437–447
 Hofreiter, M., 1–11
 hominid evolution, 1–11
 Homol’ova, L., 599–609
 human, 175–189
 “Human Alu Insertion Polymorphisms in North African Populations,” 611–626
 human birth, 695–713
 human evolution, 141–151
 human genetic diversity, 405–435
 human origins, 637–644
 Hutterite, 599–609
 HVRI, 55–70
 hypertension, 71–86
- Iannitti, T., 531–559
 Idaho, 685–694
 immigrant, 685–694
 inclusive fitness, 213–245
 “Increased Resolution of Y Chromosome Haplogroup T Defines Relationships among Populations of the Near East, Europe, and Africa,” 39–53
 incremental markers, 695–713
 INDEL, 627–636
 India, 405–435
 Indo-European, 87–105, 107–128, 129–135
 inflammation, 531–559
 “Inflammation and Genetics: An Insight in the Centenarian Model,” 531–559
 “Integration *versus* Apartheid in post-Roman Britain: A Response to Thomas et al. (2008),” 715–733

- interethnic crosses, 345–361
- “Interview with Rohina Rubicz, Winner of the 2010 Gabriel W. Lasker Prize,” 337–344
- “Interview with Sarah Tishkoff: Perspectives for Genetic Research in African Populations,” 637–644
- intragenomic conflict, 213–245
- “Introduction: Integrating Genetic and Cultural Evolutionary Approaches to Language,” 141–151
- Italy, 393–404
- Izaguirre, M. H., 345–361
- Jewish, 39–53
- Jorden, F. M., 297–321
- Karafet, T. M., 39–53
- Kervaire, B., 405–435
- Kidd, J. R., 363–377
- Kidd, K. K., 363–377
- kin terms, 297–321
- kinship theory, 213–245
- Klautau-Guimarães, M. N., 509–521
- Krahn, T., 39–53
- lactase persistence, 379–392
- “Lactase Persistence in Central Asia: Phenotype, Genotype, and Evolution,” 379–392
- language, 141–151, 153–173, 175–189, 297–321
- language capacities, 213–245
- language change, 279–296
- language evolution, 247–259, 261–278, 279–296
- language faculty, 261–278
- language universals, 247–259, 261–278
- Lasker Distance, 573–598
- Lean, M. E. J., 523–530
- learning bias, 261–278
- “Learning Bias, Cultural Evolution of Language, and the Biological Evolution of the Language Faculty,” 261–278
- Lemba, 39–53
- lethal recessive gene, 523–530
- Li, H., 363–377
- Libya, 611–626
- lifestyle, 379–392
- linguistic diversity, 279–296
- Longley, P. A., 573–598
- Lucchetti, E., 393–404
- Luizon, M. R., 509–521
- macaque, 175–189
- Macchiarelli, R., 695–713
- Mačková, S., 599–609
- Maciel, L. G. L., 627–636
- Madrigal, L., 71–86
- Mahjoub, T., 611–626
- Manni, F., 337–344, 695–713
- Mantel correlations, 477–489
- marriage, 87–105, 129–135, 509–521
- Mateos, P., 573–598
- maternal origin, 55–70
- Maytia, D., 55–70
- McElligott, A. G., 141–151
- Mendez, F. L., 39–53
- Mesoudi, A., 141–151
- MHC, 405–435
- microsatellites, 659–684
- “Migration in Afro-Brazilian Rural Communities: Crossing Demographic and Genetic Data,” 509–521
- migrations, 71–86, 715–733
- mitochondrial and Y-chromosome haplogroups, 345–361
- “Mitochondrial DNA in Basque Descendants from the City of Trinidad, Uruguay: Uruguayan- or Basque-like Population?” 55–70
- modularity, 323–329
- monkey, 175–189
- monogamy, 87–105, 129–135
- “Mother and Others: The Evolutionary Origins of Mutual Understanding” (book review), 648–650
- Mozambique, 13–38
- mtDNA haplogroups, 55–70
- Mtiraoui, N., 611–626
- Munda population, 405–435

- nativism, 323–329
natural selection, 379–392, 637–644
Neanderthal genome, 1–11
Neanderthals, 1–11
neolithic, 39–53
“The Neolithic Demographic Transition and its Consequences” (book review), 645–648
neolocality, 107–128, 129–135
neonatal line, 695–713
next generation sequencing technologies, 637–644
nonhuman primates, 153–173
nonverbal behavior, 213–245
North Africa, 611–626
Nunes, J. M., 405–435, 437–447
- “Obesity, Hypertension, and Migration: A Meta-Analysis of Populations of the South Asian Diaspora,” 71–86
Oliveira, S. F., 509–521
Ostrer, H., 39–53
Otarola, F., 71–86
overlapping genes, 213–245
- Pakstis, A. J., 363–377
Palmieri, B., 531–559
parental antagonism theory, 213–245
“The Parental Antagonism Theory of Language Evolution: Preliminary Evidence for the Proposal,” 213–245
parental obesity, 523–530
partition of variation, 659–684
Pasquet, P., 379–392
pastoralism, 379–392
“Paternal Genetic History of the Basque Population of Spain,” 455–475
Pattison, J. E., 715–733
Pedrosa, M. A. F., 509–521
Penso-Dolfin, L., 477–489
perception, 191–212
Petkov, C. I., 175–189
Petrejčiková, E., 599–609
phonetics, 191–212
- “A Phylogenetic Analysis of the Evolution of Austronesian Sibling Terminologies,” 297–321
phylogenetic comparative method, 297–321
phylogeny, 323–329
phylogeography, 637–644
Poittevin-Gilmet, E., 55–70
polygyny, 87–105, 129–135
population expansion, 477–489
“A Population-Genetic Perspective on the Similarities and Differences Among World-wide Human Populations,” 659–684
population genetics, 337–344, 455–475
population structure, 659–684
population substructure, 627–636
positive selection, 363–377
primate, 175–189
“Primate Vocal Communication: A Useful Tool for Understanding Human Speech and Language Evolution?” 153–173
Prista, A., 13–38
private alleles, 659–684
- Quintana-Murci, L., 379–392
- Rahal, M., 405–435
Raxter, M., 71–86
Reali, F., 247–259
Rebala, K., 599–609
“Reconstructing the History of Marriage and Residence Strategies in Indo-European-Speaking Societies,” 129–135
“Reconstructing the History of Marriage Strategies in Indo-European-Speaking Societies: Monogamy and Polygyny,” 87–105
“Reconstructing the History of Residence Strategies in Indo-European-Speaking Societies: Neo-, Uxori-, and Virilocality,” 107–128
relatedness asymmetries, 213–245
Renfrew/Paisley, Scotland, 523–530
resampling, 437–447
residence, 107–128, 129–135
Riandiere de la Roche, B., 561–564
Ribeiro dos Santos, A., 627–636

- Riccio, M. E., 405–435, 437–447
 Rigaud, S., 645–648
 Rocha, J., 13–38
 Rodrigues, E. M. R., 627–636
 Rodríguez Larralde, A., 345–361
 Rosenberg, N. A., 659–684
 Rossi, P., 695–713
 Ruiz, E., 71–86
 Rusínová, L., 599–609
- Sanchez-Mazas, A., 405–435, 437–447
 Sans, M., 55–70
 Santos, S., 627–636
 Ségurel, L., 379–392
 “Selection on the Human Bitter Taste Gene,
TAS2R16, in Eurasian Populations,”
 363–377
 sensory exploitation, 213–245
 “Sex Distribution of Offspring-Parents Obesity:
 Angel’s Hypothesis Revisited,” 523–530
 sex ratio, 523–530
 sexual antagonism, 213–245
 Sierras Centrales, 491–507
 similarity index, 393–404
 Simões, A. L., 509–521
 Siváková, D., 599–609
 Slocombe, K. E., 153–173
 Slovakia, 599–609
 Slovenia, 393–404
 Smith, K., 261–278
 Soodyall, H., 39–53
 Soták, M., 599–609
 South America, 491–507
 South Asian diaspora, 71–86
 Southeast Asia, 405–435
 Sovičová, A., 599–609
 Spain, 455–475
 spatial autocorrelation, 491–507
 spatial regression, 491–507
 speech, 141–151, 191–212
 STR polymorphism, 599–609
 stress, 71–86
 Sub-Saharan Africa, 637–644
 Sun, G., 455–475
 surnames, 55–70, 393–404, 573–598
- TAS2R16*, 363–377
 Tasso, M., 393–404
 Tiercy, J.-M., 405–435, 437–447
 Toledo, R. C. P., 509–521
 Tunisia, 611–626
- UEPSTRS, 13–38
 unilinearly transmitted polymorphisms,
 637–644
 universal grammar, 247–259
 uxoriolocality, 107–128, 129–135
- van Schaik, C. P., 648–650
 Venezuela, 345–361
 Veuille, M., 379–392
 virilocality, 107–128, 129–135
 Vívibes de Lugo, M., 345–361
 vocal communication, 153–173
 vocal learning, 153–173
 vocal production, 191–212
 vocal tract, 191–212
 vocalization, 141–151, 175–189, 191–212
- Watt, G., 523–530
 Wilson, B., 175–189
- Y chromosome, 39–53, 455–475
 Y-short tandem repeat loci, 455–475
 Y-STR, 685–694
 “The Y-STR Genetic Diversity of an Idaho
 Basque Population, with Comparison to
 European Basques and US Caucasians,”
 685–694
 YFiler, 685–694
 Young, K. L., 455–475
- Zanolli, C., 695–713
 Zubizarreta, J., 685–694