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An Analytical Survey of Persian Works on Indian Learned Traditions

The 5th Perso-Indica-Conference in Bonn, February 1st – 2nd

Science and Philosophy:

Translation, Transmission and Interaction between Persianate and Hindu Traditions

Abstracts of the Papers

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Noemie Verdon (Nālandā University): Al-Bīrūnī's *Kitāb Pātanǧal* and *Kitāb Sānk*: Methods and Strategies of Translation

The Perso-Muslim polymath al-Bīrūnī lived in Central Asia between the end of the tenth and the beginning of the eleventh centuries CE. His monograph on India, the *Taḥqīq mā li-l-Hind* (*ca*. 1030), is particularly remarkable, as the scholar describes Indian religion, sciences, literatures and customs in an extremely exhaustive, meticulous and objective way; which remains unparalleled for his time.

In this work, al-Bīrūnī abundantly quotes two texts related to classical Sāṃkhya and Yoga philosophies which he had also translated from Sanskrit to Arabic. The two texts are respectively titled in Arabic the *Kitāb Sānk* and the *Kitāb Pātanǧal*. As for the former, extracts of it are scattered in the *Taḥqīq māli-l-Hind*; which remains our only source of knowledge of this work. A complete manuscript of the latter exists today and was edited by Hellmut Ritter in 1955. Several established scholars, such as Sachau (1888), Garbe (1894; 1917), Takakusu (1904) or Pines and Gelblum (1966; 1977; 1983; 1989), attempted to identify the Sanskrit sources of these translations. Their efforts however never reached conclusive results.

After an introduction to al-Bīrūnī's life and intellectual context, the presentation will focus on the methods and strategies he adopted when composing the *Kitāb Sānk* and the *Kitāb Pātanǧal*. Rather than proposing a literal translation, al-Bīrūnī is offering his own interpretation of Indian philosophical concepts to a Perso-Muslim readership. During this process of cultural translation, the scholar negotiated a great deal with his Sanskrit sources. The presentation will analyse several passages of his interpretations and discuss the possible Sanskrit sources of the two Arabic translations.

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Sajjad Rizvi (University of Exeter): Empires of the Mind: Metaphysics in the Qasbahs of the late Mughal Period

In recent years, Islamic intellectual history has come into vogue including in contexts such as South Asia. But there is still a dearth of writing on the metaphysics of the *dars-i niẓāmī* that developed from the middle of the 18th century, and even then much less that attempts to locate it within its Indian context. In this paper, I will examine the work of thinkers who did much to develop a new school of metaphysics engaging critically with the thought of Iranians such as Mīr Dāmād (d. 1040/1631) and Mullā Ṣadrā (d. 1045/1636) received into India from earlier in the late 17th and early 18th centuries. These were two of the founding fathers of the Farangī Maḥall tradition, namely ʿAbd al-ʿAlī later known as Baḥr al-ʿulūm (d. 1225/1810), the son of the eponymous founder of the *dars-i niẓāmī*, Mullā Niẓām al-Dīn Sihālvī, and his teacher and kinsman Kamāl al-Dīn Sihālvī (d. 1175/1761).

I will consider how their conception of metaphysics developed in the light of the emphasis on logic and natural philosophy in the new curriculum as well as their own commitment to their Qādirī Sufi way. But more than that, drawing upon some hitherto little used material in historical and memorializing texts (*taẕkiras*), I would like to suggest that their philosophical choices and priorities cannot be divorced from their context of the revival of the Indian schools of Navyā-Nyāya and Vedānta in the same North Indian locales that they frequented (and indicated by the recent work of Jonardon Ganeri). Much has already been made between the interaction of the school of Ibn ʿArabī and Vedānta (already evident in the work of Dārā Shikoh, ʿAbd al-Raḥmān Chishtī, and even Bēdil) but hitherto little consideration of the Navyā-Nyāya school.

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Ali Balaeilangroudi (University of Bonn): A Persian adaptation of the *Vedāntasara*: A Combination of Platonism, Hinduism and Islam

The capacity of Persian literature to harmonize different or even desperate notions has been reflected in the so-called book of *Bidāntsār*. The book is dedicated to Akbar (reign 1556 – 1605) and takes its name from the famous philosophical book of *Vedāntasara*, composed in the 15th century. The Persian version, however, is an inspired text from that Indian original and a kind of a free adaptation rather than a bound translation. Maybe that is the reason why the 'author' suggests a new title for the book which is more in concordance with its content.

Human being, according to the text, had been united with a transcendence reality, identifiable with the 'real' light or the light of the 'truth', but has somehow separated from that. It is possible for him to be unified again with that light passing the 'right' way which has 12 steps, as the way of sun -the greatest source of light-, has. The seeker of the truth would overcome these steps practicing yoga as is suggested and taught by Indian deities.

This process, at least regarding the issue of the present manuscript, is not necessarily in contradiction with Platonic ideas but not entirely in concordance with orthodox Islamic notions and dogmatic aspects. Human being, according to the rigid reading of Islam, is not and will not be unified with the transcendence. Even that biblical account that 'God created mankind like to Him' does not appear in the Koran. Human being will not lose his personhood but will arrive to the Heaven. He is advised to 'return' to God by his faith and good deeds but there is no way for him to take part in the divinity. And the state of faith is the confession to the unity of God who has no associate.

Is it possible to conjoin Platonic, Hindu and Islamic teachings together? The applied literature of our manuscript braids all these disparate ideas into each other. This literature also reflects the ideals of the dedicatee of the book, Akbar, who it was his dream to have a religion which could include all the favorable characters of the previous ones.

The aim of my lecture would be to show how the author attempted to harmonize above mentioned schools. How did he connect Platonic principles to Indian Philosophy? How were both of these systems accompanied with Islamic terminology? And what was the role of Persian literature in this process?

In order to answer these questions I will focus on both style of the writing of the author and his way to erect the structure of the book. I will show with which sentences and with which method the author renders his understanding about the mentioned ideas and how different philosophical and religious concepts, applied in the book, slides from one to another.

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Patrick D'Silva (University of North Carolina, Chapel Hill): The Philosophical Implications of Classifying *`ilm-i dam* as "Science"

For scholars of religion in South Asia, the circulation of Persian translations of a Sanskrit genre of divination texts known as *shiva-svarodaya* holds many lessons – and leads to more questions. These texts contain instructions on how a practitioner may use knowledge of the breath in order to predict future events as well as manipulate and even destroy one's opponents. Persian translations of *svarodaya* are attested as early as the 14th CE, and continue to appear in various forms (most notably six-chapter abridgments of the *Kamarupanchashika*) up through the 20th CE in India and Iran. This paper focuses on two 16th CE manuscripts found in the Delhi Persian collection currently housed at the British Library, but originally part of the royal Mughal library at the Red Fort. The Persian translations and interpretations label themselves as *`ilm-i dam*, "the science of the breath." Labeling them as a "science" in Persian texts goes back as far as the mid-14th CE encyclopedia, the *Nafais al-funun*, which lists *`ilm-i dam* with the natural sciences. The existence of the polycentric *`ilm-i dam* corpus demands several questions for the study of knowledge production and exchange between religious communities in Persianate South Asia. What motivates North Indian Muslim scholars in the 16th CE to promulgate divination practices that had known linkages to Shiva? India's cosmopolitan nature contributed to a greater degree of knowledge sharing, with different polities engaging in extensive borrowing. What light does *`ilm-i dam* shed on the way that learned Muslim elites are negotiating these questions in early modern India, and what evidence is there as to the identity of their Hindu interlocutors? This paper argues that translating *`ilm-i dam* is a philosophical act, signifying that sectarian origins mattered less than perceived efficacy for courtly elites at this time. The translation from *svarodaya* to *`ilm-i dam* is linguistic, but also cultural, in that some of the "Indic" elements (such as divine beings) are missing in the Persian translations, thus marking areas of resistance on the part of the interpreters. If Sanskrit texts contained knowledge that could be useful to courtly elites in finding success, then the Muslims who patronized the translation of these texts were unconcerned with the provenance of said practices. This indicates a very different type of philosophical relationship to religious difference than what is depicted in modern day discourse on religion and identity, especially in South Asia.

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Kazuyo Sakaki (Hokkaido Musashi Women's Junior College): Tantric elements in Persian translated works on astrology

In India, astrology has been a part of the political, cultural and social apparatus and received ideological foundations in the Vedic tradition. With a great antiquity traced back to the Vedic or even more earlier ages, Tantric influences have infiltrated in astral hermeneutics since the early medieval period. There are a few Tantric texts which specialize in astrology. To fulfil mundane desire, or to overcome misfortunes, astrological ritual was performed by ritualistic worship with specific mantras, yantras, meditation and visualization. In yogico-tantric practices, meditation and visualization through Kuṇḍalinī yoga made the way to propitiate yoginīs or goddesses. In the domain of Persian translations of Sanskrit classics on astrology, the most productive Sanskrit source is the *Narapatijayacaryā* written by Narapati in 1177. This is known as divinatory text and based on seven yāmala-tantras and other tantras such as the *Yuddhajayārṇava* ascribed to Bhaṭṭotpala. The text was widely circulated along with Sanskrit and vernacular commentaries. The main concern of this text is the explanation of the means of conquering demonic influences and the signs of death by various devices of prediction and Tantric rites with meditation, visualization of specific goddesses through offerings in the fire, praises and prayer with specific mantras. We find visual representations of Hindu yoginīs or planetary images with verbal descriptions of tantric rites relevant to them in the *Kāmarūpañcāśikā* and the *Nujūm al 'Ulūm*. As is well-known, the former was partly quoted in the Persian encyclopedia *Nafā'is al-Funūn wa 'Arāyis al-'Uyūn* in the 14th century and is one of the possible source texts of the *Ḥawḍ al-Ḥayāt.* The latter is an astrological encyclopedia dated in 1570 in Bijapur.

Present paper will be concerned with the transmission of this Sanskrit tantric text on astrology and investigate how tantric elements in the original text have been transmitted and adapted by the contemporary intellectuals with theoretical and practical knowledge of astrology inherited from Hellenistic, Sasanian and Indian traditions and examine textual evidences represented in Persian translated works and fragments.

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Johannes Thomann (University of Zurich): **Transcriptions and loan translations of Sanskrit words in early Arabic texts on astronomy and astrology**

In the renaissance of the sciences in the Islamic World during the 2nd half of the 8th century CE, a number of Sanskrit works on astronomy and astrology were translated into Arabic. These early translations are not preserved, but many literal quotations from them are found in later works. These excerpts provide sufficient source material for investigations on grammar, style and terminology of these early translations. In the paper to be presented, terminology will be the main topic. It is not widely known that standard Arabic astronomical terminology is based to a considerable part on Sanskrit terminology by way of loan translation. For instance, such basic terms as daraja "degree" or ḍaraba "to multiply" are translations of Sanskrit pāda "step" and hati "striking; multiplication". Transliterations of Sanskrit astronomical terms did occur in early translations, but were not adopted in later works. Ḥabash al-Ḥāsib provided a list of the Sanskrit names of the 27 nakṣatra in Arabic script. However, the system of 28 lunar mansions, probably based on the system of the Chinese xiu became standard. In astrology more foreign words became part of later terminology, most of them from Pehlevi sources, but based on Sanskrit sources. Some Arabic names of zodiacal signs seem to have been influenced by their Sanskrit equivalents: jawzāʾ "Gemini" from Sanskrit mithuna "(heterosexual) couple; Gemini", qaws "Sagittarius" from Sanskrit dhanus "bow; Sagittarius", and dalw "Aquarius" from Sankrit kumbha "jar; Aquarius". The name zuhra for Venus might have been inpired by Sanskrit śukra "bright; Venus". Most of these acculturated Sanskrit terms in Arabic were used in Persian works from the 11th century onwards, can be seen in the Persian transaltion of alBīrūnī's Tafhīm.

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Sreeramula Rajeswara Sarma (formerly Aligarh Muslim University), Maryam Zamani (Guilan University, Rasht): Exploring the Translations of Scientific Texts from Persian to Sanskrit and vice versa; Challenges and Strategies

From the time of the great al-Bīrūnī, if not earlier, texts on exact sciences like mathematics, astronomy and astronomical instruments were translated actively from Sanskrit to Arabic and Persian and vice versa. While al-Biruni's effort was largely a private enterprise, royal patronage of these exchanges between the Sanskrit and Islamic traditions of scientific learning commenced from the time of Fīrūz Shāh Tughluq in the later half of the fourteenth century and continued at the Mughal court in the sixteenth and seventeenth centuries and at the court of Sawai Jai Singh in the first half of the eighteenth century. The eighteenth century also saw a new type of translation when Indo-Persian astrolabes and celestial globes were appropriated by the Sanskrit scholarship with the addition of Sanskrit engravings next to the original Arabic/Persian legends.

However, throughout the twentieth century, this subject of scientific exchanges was treated from the narrow perspective of the bibliographer. Lists were made and names were enumerated of books that were translated from Sanskrit to Persian, and vice versa. But no effort was made to evaluate the translations individually by comparing them with the original texts; to examine whether the new version was a translation or just a paraphrase, whether the rending was of the complete original text, or only a part, and so on. The absence of such efforts in the twentieth century can be attributed, to a certain extent, to the lack of bilingual expertise in the Indian subcontinent and even outside.

But in recent years, the Perso-Indica, very laudably, has brought together a number of young bilingual scholars who have already made significant contributions on the translations of certain texts. Therefore, it is desirable that under the auspices of the Perso-Indica an informal group conducts an intensive study of the Persian rendering of a Sanskrit scientific text and the Sanskrit translation of Persian text and attempts to answer some of the questions raised above. The best candidates for such an exercise would be the Persian translation of the *Līlāvatī* by Abū'l Fayḍ Fayḍī at the court of Akbar and the Sanskrit rendering of Naṣīr al-Dīn al-Ṭūsī's Persian manual on the astrolabe which is popularly known as the *Bist Bāb* at the court of Sawai Jai Singh.

Fayḍī himself was not a scholar of Sanskrit; his translation of the *Līlāvatī*, made with the help of some unnamed scholars from the Deccan, raises the following issues. (a) It has been said that this Persian rendering is not complete, but contains certain gaps. Therefore, it is necessary to identify the parts which are not translated and to seek the reasons for this omission. (b) In Sanskrit texts the rules concerning mathematical operations are formulated in a very terse language, which cannot be understood easily without the oral explanations from the teacher or without the aid of the written commentaries. It needs to be examined how the rules of the *Līlāvatī* are elucidated in the Persian translation; was the elucidation done by the intermediaries who assisted in the translation or are there also translations from the Sanskrit commentaries? (c) Part of the fame attained by the *Līlāvatī* is due to

its highly poetic style. The alliterative diction of Sanskrit verses cannot, of course, be replicated in any translation; but were some of the similes and other figures of speech were rendered into Persian?

The issues arising from the Sanskrit rendering of the *Bist Bāb* are of a different kind. At Jai Singh's court several Arabic texts were rendered into Sanskrit through the mediation of Muslim scholars. (a) It needs to be ascertained whether the *Bist Bāb* was also rendered into Sanskrit in the same manner or whether it was translated directly from the original. (b) Is the Sanskrit rendering complete? (c) Does it contain additional passages to elucidate the content of the Persian original? (d) How were technical terms rendered into Sanskrit?

The proposed paper will offer first a brief overview of the scientific texts that were translated from or into Sanskrit and then dwell on the strategies to be employed for a detailed study of these intellectual exchanges.

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Zeinab Karimian (Laboratoire SPHERE (UMR 7219, CNRS) - Paris) & Mohammad Bagheri (University of Tehran): **The Persian Translation of the *Bījagaṇita* by 'Aṭā' Allāh Rushdī**

Bījagaṇita is a Sanskrit work on algebra by the famous mathematician and astronomer of the 12th century, Bhāskarāchārya. The first part of this treatise deals with the presentation of the elementary operations of algebra and the general methods; the second part is based on the application of algebra which is illustrated with the help of a series of examples.

The Persian translation of *Bījagaṇita* was accomplished by 'Aṭā' Allāh Rushdī ibn Aḥmad Nādir for Shāh Jahān in 1634 A.D. The work is divided into an introduction (*muqaddima*), subdivided in six chapters (*bāb*); and five books (*maqāla*) which contain several chapters and sections. In the foreword, the translator states that this treatise includes significant and practical rules which are not mentioned in *Līlāvātī*, Bhāskarā's arithmetic text. It seems that the Persian translator hasn't fulfilled a meticulous translation of the original Sanskrit text of Bījagaṇita; instead, he has executed a mixture of text and his own commentaries. Besides, it appears that the translator 'Aṭā' Allāh has employed the technical vocabularies which are introduced in the works of the mathematicians of medieval Islam like al-Khwārazmī.

In this paper, we will introduce Bhāskarāchārya and his works as well as 'Aṭā' Allāh Rushdī briefly. Afterwards, we will examine the Persian translation of Bījagaṇita by 'Aṭā' Allāh according to some extant manuscripts and we compare it with the original Sanskrit text based on its English translation by Takao Hayashi (2009).

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Emma Flatt (University of North Carolina, Chapel Hill): **A Compendium of Effective and Practical Tools: The *Nujūm al-ʿUlūm***

This paper will discuss the sciences collectively known as the 'occult sciences': astrology, prognostication, talismans and invocation as portrayed by the *Nujūm al-ʿUlūm*, an astrological encyclopaedia composed by the sultan of Bijapur, ʿAli ʿAdil Shah, in 1570. Written with the didactic intent of providing guidance and 'necessary medicine' to his readers, the author explicitly frames his tome as a compendium of effective and practical tools. In this paper I will explore how and why ʿAdil Shah undertakes a project of both verbal and conceptual translation, bringing together multiple variant traditions within the broader categories of Indic and Islamicate sciences and proposing equivalences and commensurabilities amongst them. I will investigate which individuals and texts were marked as authoritative, which theories and sciences were considered effective and I will make some suggestions about the modalities of the transmission of scientific knowledge in the Bijapur court.

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Jean Arzoumanov (Université Paris 3 – Sorbonne Nouvelle): Indic science, art and craft in the *Yādgār-i bahādurī*, a nineteenth-century Indo-Persian encyclopedia

The *Yādgār-i bahādurī*, an Indo-Persian encyclopedic work, was completed in 1834 by Bahādur Singh, a Hindu Kayastha who had settled in Lucknow after leaving Delhi. Totaling 2100 pages in the British Library manuscript, the *Yādgār-i bāhadurī* was intended by its author as a compilation from earlier works in "Hindi", Persian and Arabic. Encompassing universal history, biography, geography, religion, science, art and craft, it gives a rare glimpse of how a nineteenth-century Persian-literate Hindu scholar could summarize Islamic, Indic and European knowledge and interweave it in a single text.

A section of the work is devoted to Indic science, art and craft. Certain Indic sciences are described along with some of their Arabo-Persian counterparts and integrated in an Islamic frame. As in Mirzā Ḫān's seventeenth-century encyclopedia of Indic sciences, the *Tuḥfat al-hind*, physiognomy is presented according both to the Islamic tradition of *qiyāfa* and *firās*a and to the Indic science of *sāmudrika*. Hindu astronomers are accounted for in a chapter on astronomy which also mentions Greek, Arabic and Iranian astronomers. In many chapters it is clear that Bahādur Singh viewed Islamic and Indic sciences as continuous and complementary. On the other hand, some chapters deal exclusively with Indic science such as architecture and the science of auspicious building. Other chapters on Indic sciences and techniques include accounts of agriculture, ironwork and other crafts. Occult sciences are prominent with chapters on breath control, talismans and magic. In many chapters, it is difficult to draw a clear line between Indic and Islamic contents since they are often seamlessly interwoven.

The *Yādgār-i bahādurī* is a rich testimony to the various branches of Islamic knowledge that learned Hindus could master along with Indic sciences. By the nineteenth century the body Indo-Persian texts on Indic sciences had become very large and could be put to good use by scholars. Indo-Persian treatises were then available on Indic astronomy, occult sciences, agriculture, art and craft and some of them were certainly known to Bahādur Singh.

Moreover in the context of a growing presence of the East India Company in Northern India and Awadh, the place of European history, geography and science is evident in the *Yādgār-i bahādurī*. It illustrates the readiness of Indian scholars to include European knowledge in the Indo-Persian intellectual tradition.

For Bahādur Singh integrating Indic science into an Islamic intellectual framework presupposed integrating Indic religious traditions into universal history. Long accounts of Hindu philosophers, devotees and ascetic orders follow the listing of Islamic saints. They helped reshape the framework of Islamic encyclopedism by presenting the Islamic and Indic religious traditions in a single sweep.

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Eva Orthmann (University of Bonn): Colour and coat: The prognostic parts of the Ś*alihotra* in Persian guise

Among the many texts translated from Sanskrit to Persian, we find several treatises on horses. They are usually called *faras-nāma* or *Śalihotra*. For all these texts, no original Sanskrit text can be established. Most *Śalihotra* versions consist of two parts: one part dealing with omens, and one part with veterinary medicine.

My lecture will focus on the first part on omens and prognostications where the quality of horses, their suitability for war, their temper etc. is derived from certain body marks. Among these body marks, the so-called *āvartas*, a kind of specific curls or hair formations, are very prominent. An important role is likewise attributed to bodily deformations, describing e.g. horses with a kind of horn looking like a third ear, or horses with five legs etc.

I will first briefly discuss the existing Sanskrit texts on horses. One of the earliest translated passages from a *Śalihotra* in Persian seems to be contained in the *Ādāb al-ḥarb va l-šağāʿa*, and another very early passage in the *Brhat Samhita*. We furthermore have three early translations from Gulbarga, Malwa and Gujarat. In comparing these different versions, first of all, the differences in their prefaces become apparent. Obviously, the approaches and attitudes of their respective translators and commissioners towards Indic culture and knowledge have been dissimilar. The translations furthermore vary with regard to their integration of Islamic traditions. None of them can be directly related to one of the known Sanskrit versions of the text; they either go back to unknown Sankrit versions, or – more likely – have been adopted and persianized to a large extent. This is especially obvious whenever prophetic traditions have been integrated, but can also be seen in passages dealing with the origins of horses which are said to come from Irak, Turkestan, Khurasan and Arabia. On the other hand, the Indic background is evident both in the attribution of the text to *Śalihotra* as well as in a classification of the horses according to the four *varnas*.

The lecture will analyze these different elements, ask for their respective sources and examine the adaptation and transformation taking place in these early versions of the *Śalihotra*.

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Chander Shekhar (University of Delhi): Variants of Indo-Persian terms in Persian adaptations of the *Śalihotra*

In the vast corpus of Indo-Persian sources, one category of *Faras-nāmas* written in India is based on Hindu or Sanskrit sources. They include the *Faras-nāma-ye hāšemī* by Zayn-al-ʿĀbidīn Ḥosaynī Hāšimī, written in 926/1520 (Huda, passim; Storey II/3, p. 395, no. 663), and the *Toḥfat al-ṣadr* by Ṣadr-al-Dīn Muḥammad Ḫān b. Zibardast Ḫān (fl. 1135 /1722-23; Storey II/3, p. 398, no. 672). Some of these manuals are copiously illustrated (e.g., Anand Rām Moḵleṣ *Rāḥat al-faras*, Rampur Raza Library, Rampur; MS New York, Public Library, Spencer Indo-Pers. no. 33*; Rāḥat al-firās*, MS London, British Library, Or. 5762; *Sālhūtār* or *Kitāb-i asb-nāma*, MSS London, British Library, Or. 6704, Or. 11918).

The available Sanskrit text is derived from the Mahabharata with many later insertions and attributed to the sage *Śalihotra* himself, though this is doubtful. In this paper, two adapted Persian versions of the *Farsnāma* which have illustrated mss in various repositories are taken up.

These two Persian renderings of Sanskrit/Hindui *Śalihotra* texts were produced in different periods as well as different regions of India. They therefore also depict variants of Indo-Persian. The *Farasnāma* of Ḥosaynī Hāšimī (Fort William collection) was translated from Marathi to Persian in 964 AH i.e. in the Bahmanid period. The poetic preamble clearly mentions that the local language knowing translator sat before the author and started describing various aspects of horses. “He was describing it in Marathi while I was trying to understand in Persian. But his efforts to make me understand stood futile. However, I made out the detail on the basis of whatever he could transmit.” This book has two chapters and five subsections.

The *Farasnāma-i Hindi* (Wellcome collection, London) was translated in the time of Šah Jahān, at the behest of Abdullāh Ḫān Bahādur by a group of pandits, who seem to have had access to the version of Zayn-al-ʿĀbidīn Ḥosaynī Hāshimī.

According to the preamble by Abdullāh Ḫān Bahādur, he found the Sanskrit/Hindui treatise in the booty after the victory on Rana Amar Singh s/o Rana Partap Singh, when he accompanied Prince Ḫurram during the early years of Jahāngīr’s reign in the above said battle. On the basis of the contents of the acquired work, a book on horses was prepared. He also states that only one chapter and some sections were adopted from this treatise, while some parts from a book on horses from the time of the Ghaznavids was also incorporated in it. The statement in the preamble does not provide the title of the Sanskrit work, but he again and again reiterates that ”the word/phrase in Sanskrit is known as”, thus one has to believe that the book was in Sanskrit and then mentions that the pandits translated it from Sanskrit to Persian. In other words, the book, Farasnāma-i Hindi is not merely a translation but a compilation of Sanskrit and Persian texts. Within the text, a glossary of equivalents can be observed.

The first section (in twelve *bābs*) begins with the creation of horses and continues with knowledge of their good and bad signs. The second section (in thirty-eight *bābs*) concerns diseases of the horse and their treatment. In the category of colors, he writes:
Pearl white>Nuqra (Persian)> Šir-i maisha (Hašmi)>Šiv Varna (Sanskrit)> Abyaż (Arabic)
Then he explains that the silver color is like the color of moonlight
Black >Siyāh>Auham(Arabic) > Like the black color of Koyal (a bird)> Kišna Varna (Abdullah)> Miškī according to the Baḫši's administrative term
Gold>Yuz>Swarn Varna
Reddish> Surḫī >Zā'farānī
Yellowish>Zardi>Zardi Gul-i-Nīlufar (Hašmi /lotus)>Pit Varna
In another chapter, we find Lahriya (Hindui)>Ḫatt (Farsi) for the omina or the line marking on the horses, and similar equivalents have been provided for the various diseases and the medicines.
Anand Ram Muḫlis' work also contains ample terminological data on the medical aspects and will therefore also briefly be considered. The terminology used in the different translations of the *Śalihotra* and their correspondences as well as disparities will be discussed in the presentation.
It may be added that these treatises were utilized for practical purposes in the cavalry units of the army till recently, as Phillot reports in the English translation of the *Farasnāma* of Sa'ādat-Yār Ḫān Rangin, son of Tahmāsb Ḫān (of early 18th c.).

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Carl W. Ernst (University of North Carolina, Chapel Hill): **Medical and Scientific Aspects of Muḥammad Ġawṯ's interpretation of Yoga**

This presentation addresses unexplored aspects of the well-known Persian treatise, the *Baḥr al-ḥayāt* of Muḥammad Ġawṯ, an expanded translation of yogic texts. Despite the text's insistence on the unity of the microcosm and the macrocosm throughout, there is a major discrepancy. While on the macro level it continues to present the familiar Islamicate post-Ibn Sina cosmology of planets and angelic intellects, on the micro level Muḥammad Ġawṯ is compelled by empirical evidence to favor the Indic explanations of the relationship between body and spirit, even though they contradict central Islamic doctrines. The remaining question is how to identify the medical teachings employed particularly in chapters 5 and 6, on embryology and the equilibrium of bodily qualities.

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An Analytical Survey of Persian Works on Indian Learned Traditions

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Fabrizio Speziale (EHESS, School of Advanced Studies in the Social Sciences, Paris): **Muslim Readers of *rasaśāstra*: Interpretations and Classification of Indian Iatrochemistry in Persianate Culture**

This paper will look at the interpretations and classification of Indian iatrochemistry (*rasaśāstra*) in Persian scientific texts of South Asia. Although Persian works on alchemy written in South Asia discussed Indian materials, medical texts played a major role in the circulation and transmission of notions drawn from *rasaśāstra* among Muslim and Persian speaking scholars. Żiyā' Muḥammad Ġaznawī's Majmūʿa-yi Żiyā' (first half of 14th century), the earliest Indo-Persian medical handbook which has been preserved, already includes an entire chapter on iatrochemical formulas attributed to yogis and drawings of alchemical tools such as the *dolāyantra*. These materials also circulated through direct translations into Persian of certain Sanskrit texts, such as the *Śārṅgadharasaṃhitā* by Śārṅgadhara. In my paper, I look more closely at how authors of Persian texts presented and defined the other's knowledge and the field of *rasaśāstra* for Persian speaking readers. Earlier Muslim medical culture did not have a specific term to refer to iatrochemistry. Persian medical texts do not use the Arabic term *kīmiyā'* (alchemy) to refer to the material on metallic drugs translated from Indian sources. We will see how in the absence of a specific term in the target language, scholars used different strategies to define and explain the field of *rasaśāstra* for Persian speaking readership.

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Stefan Reichmuth (Ruhr University of Bochum): **Ṭibb and Indian Medical Tradition in the Sultanate Period: Ḥakīm Qāsim b. Yaʿqūb and his *Kitāb-i Sulaymān-Shāhī* (902/1496)**

The paper discusses an important medical text of the Sultanate Period in India which shows a remarkable engagement with the Indian medical tradition. It will offer an identification of Sulaymān Shāh, the mentioned patron of the otherwise unknown author of the late 9th/15th century, and also of the overlord of this patron, relating them both to the Shaykh-zāde courtiers of the Lodi sultanate. The text itself exists in two manuscripts which show clear differences in the confessional background of their copyists (one Sunni, the other clearly Twelver Shi'ite).

A closer look at the introduction conveys a skillful merger of philosophical and medical knowledge with Koranic "wisdom" (*ḥikma*), which provides a religious grounding for Hellenist medicine and, at the same time, foregrounds an integration of therapeutic devices derived from Koran and Prophetic Tradition. Although not stated here, it equally becomes clear in the following that the recourse to wisdom also allows the author to include Indian medical devices.

By a discussion of the structure and content of the text with its 115 chapters (*bāb*) it will be shown that the description of diseases and their various treatments often includes their Indian names and draws on some of the basic Ayurvedic concepts; especially Persian "wind" (*bād*), which apparently covers both "black bile" and reflections of Ayurvedic *vata*. The text thus reflects a synthetic selection made by the author from Indian medical lore which he inserted into a general framework of Graeco-Islamic *ṭibb*. This is confirmed by a lengthy iatrochemical section on calcination of mercury and other metals. Although it appears that the author largely draws on long-established alchemical methods for this calcination, his remarkably enthusiastic attitude towards the universal invigorating qualities of mercury draws him close to predilections well-known for Ayurvedic medicine, and thus marks an important stage in the engagement of the Graeco-Islamic physicians with the Indian medical tradition.