

Albêrûnî's

INDIA

तस्त्रैजसामवृत्ततदा तिज्ञाणापवोणा मजयउवाच श्रीम
नालक्षयत्ततःकश्चि शरुणास्रणसंवृतं अर्जुनस्यलघुत्वस्त्रि



यात्तच्छामाणाःकोनयोनत्त्रैवमहारथाः

Dr Edward C. Sachau

ALBÊRÛNÎ'S INDIA

An Account of the Religion, Philosophy, Literature, Geography, Chronology,
Astronomy, Customs, Laws and Astrology of India about A.D. 1030

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I

The literary history of the East represents the court of King Maḥmûd at Ghazna, the leading monarch of Asiatic history between A.D. 997-1030, as having been a centre of literature, and of poetry in particular. There were four hundred poets chanting in his halls and gardens, at their head famous Unsurî, invested with the recently created dignity of a poet-laureate, who by his verdict opened the way to royal favour for rising talents; there was grand Firdausî composing his heroic epos by the special orders of the king, with many more kindred spirits. Unfortunately history knows very little of all this, save the fact that Persian poets flocked together in Ghazna, trying their kasîdas on the king, his ministers and generals. History paints Maḥmûd as a successful warrior, but ignores him as a Mæcenas. With the sole exception of the lucubrations of bombastic Utbî, all contemporary records, the *Makâmât* of Abû- Naşr Mishkânî, the *Ṭabakât* of his secretary Baihakî, the chronicles of Muḥammad Ghaznavi, Maḥmûd Warrâk, and others, have perished, or not yet come to light, and the attempts at a literary history dating from a time 300-400 years later, the so-called *Tadhkiras*, weigh very light in the scale of matter-of-fact examination, failing almost invariably whenever they are applied to for information on some detail of ancient Persian literature. However this may be, Unsurî the panegyrist, does not seem to have missed the sun of royal favour, whilst Firdausî, immortalised by Firdausî, had to fly in disguise to evade the doom of being trampled to death by elephants. Attracted by the rising fortune of the young emperor, he seems to have repaired to his court only a year after his enthronisation, *i.e.* A.D. 998. But when he had finished his *Shâhnâma*, and found himself disappointed in his hopes for reward, he flung at him his famous satire, and fled into peaceless exile (A.D. 1010). In the case of the king *versus* the poet the king has lost. As long as Firdausî retains the place of honour accorded to him in the history of the world's mental achievements, the stigma will cling to the name of Maḥmûd, that he who hoarded up perhaps more worldly treasures than were ever hoarded up, did not know how to honour a poet destined for immortality.

And how did the author of this work, as remarkable among the prose compositions of the East, the *Shâhnâma* in poetry, fare with the royal Mæcenas of Ghazna?

Alberuni, or, as his compatriots called him, Abû Raiḥân, was born A.D. 973, in the territory of modern Khiva, then called Khwârizm, or Chorasmia in antiquity.² Early distinguishing himself in science and literature, he played a political part as councilor of the ruling prince of his native country of the Ma'mûnî family. The counsels he gave do not seem always to have suited the plans of King Maḥmûd at Ghazna, who was looking out for a pretext for interfering in the affairs of independent Khiva, although its rulers were his own near relatives. This pretext was furnished by a military *émeute*.

Maḥmûd marched into the country, not without some fighting, established there one of his generals as provincial governor, and soon returned to Ghazna with much booty and a great part of the Khiva troops, together with the princes of the deposed family of Ma'mûn and the leading men of the country as prisoners of war or as hostages. Among the last was Abû-Raiḥân Muḥammad Ibu Ahmaḍ Alberuni.

This happened in the spring and summer of A.D. 1017. The Chorasmian princes were sent to distant fortresses as prisoners of state, the Chorasmian soldiers were incorporated in Maḥmûd's Indian army; and Alberuni—what treatment did *he* experience at Ghazna? From the very outset it is not likely that both the king and his chancellor, Aḥmad Ibn Hasan Maimandî, should have accorded special favours to a man whom they knew to have been their political antagonist for years. The latter is the same man who had been the cause of the tragic catastrophe in the life of Firdausî, was in office under Maḥmûd from A.D. 1007-1025, and a second time under his son and successor, Mas'ûd, from 1030-1033. There is nothing to tell us that Alberuni was ever in the service of the state or court of Ghazna. A friend of his and companion of his exile, the Christian philosopher and physician from Bagdad, Abulkhair Alkhammâr, seems to have practised in Ghazna his medical profession. Alberuni probably enjoyed the reputation of a great *munajjim*, i.e. astrologer-astronomer, and perhaps it was this quality that he had relations to the court and its head, as Tycho de Brahe to the Emperor Rudolph. When writing the '*Ἰνδικά*', thirteen years after his involuntary immigration to Afghanistan, he was a master of astrology, both according to the Greek and the Hindu system, and indeed Eastern writers of later centuries seem to consider him as having been the court astrologer of King Maḥmûd. In a book written five hundred years later (v. *Chrestomathie Perscme, &c.*, par Ch. Schefer, Paris, 1883, i.p. 100 of the Persian text), there is a story of a practical joke which Maḥmûd played on Alberuni as an astrologer. Whether this be historic truth or a late invention, anyhow the story does not throw much light on the author's situation in a period of his life which is the most interesting to us, that one, namely, when he commenced to study India, Sanskrit and Sanskrit literature.

Historic tradition failing us, we are reduced to a single source of information—the author's words—and must examine to what degree his personal relations are indicated by his own words. When he wrote, King Maḥmûd had been dead only a few weeks. *Le roi est mort*—but to whom was *Vive le roi* to be addressed?

Two heirs claimed the throne, Muḥammad and Mas'ûd, and were marching against each other to settle their claims by the sword. Under these circumstances it comes out as a characteristic fact that the book has no dedication whatever, either to the memory of Maḥmûd, or to one of the rival princes, or to any of the indifferent or non-political princes of the royal house. As a cautious politician, he awaited the issue of the contest; but when the dice had been thrown, and Mas'ûd was firmly established on the throne of his father, he at once hastened to dedicate to him the greatest work of his life, the *Canon Masudicus*. If he had been affected by any feeling of sincere gratitude, he might have erected in the '*Ἰνδικά*' a monument to the memory of the dead king, under whose rule he had made the necessary preparatory studies, and might have praised him as the great propagator of Islam without probably incurring any risk. He has not done so, and the terms in which he speaks of Maḥmûd throughout his book are not such as a man would use when speaking of a deceased person who had been his benefactor.

He is called simply *The Amîr Maḥmûd*, ii. 13 (Arabic text, p. 208, 9). *The Amîr Maḥmûd, may God's mercy be with him*, i. 116 (text, p.56, 8), *The Amîr Maḥmûd, may the grace of God be with him*, ii. 103 (text, p. 252, II). The title *Amîr* was nothing very complimentary. It had been borne by his ancestors when they were simply generals and provincial governors in the service of the Sâmanî king of Transoxiana and Khurasan. Speaking of Maḥmûd and his father Sabuktagîn, the author says *Yamîn-aldaula Maḥmûd, may God's mercy be with them*, i. 22 (text, p. 11, 9). He had received the title *Yamînaldaula*, i.e. *The right hand of the dynasty* (of the Khalif), from the Khalif, as a recognition of the legitimacy of his rule, resembling the investiture of the German Emperor by the Pope in the Middle Ages. Lastly, we find at ii. 2 (text, p.203, 20) the following terms; "*The strongest of the pillars (of Islam), the pattern of a Sultan, Maḥmûd, the lion of the world and the rarity of the age, may God's mercy be with him.*"

Whoever knows the style of Oriental authors when speaking of crowned heads, the style of the prefaces, which attains the height of absurdity at the court of the Moghul emperors at Delhi, will agree with me that the manner in which the author mentions the dead king is cold, cold in the extreme; that the words of praise bestowed upon him are meagre and stiff, a poor sort of praise for a man who had been the first man in Islam, and the founder of Islam in India; lastly, that the phrases of benediction which are appended to his name according to a general custom of Islam, are the same as the author would have employed when speaking of any acquaintance of his in common life who had died. He says of Maḥmûd (i. 22): "He utterly ruined the prosperity of the country (of India), and performed those wonderful exploits by which the Hindus became like atoms of dust scattered in all directions and like a tale of old in the mouth of the people." To criticise these words from a Muslim point of view, the passage of the ruining of the prosperity of the country was perfectly out of place in the glorification of a Ghâzî like Maḥmûd.

That it was not at all against the moral principles of Alberuni to write such dedications to princes is shown by two other publications of his, with dedications which exhibit the customary Byzantinism of the time. In the preface of the "Chronology of Ancient Nations" (translated, &c., by Edward Sachau, London, 1879), he extols with abundant praise the prince of Hyrcania or Jurjân, Shamsh-alma'âlî, who was a dwarf by the side of giant Maḥmûd. The studied character of the neglect of Maḥmûd in the *Ἰνδικά* comes out more strongly if we compare the unmerited praise which Alberuni lavishes upon his son and successor. The preface of his *Canon Masudicus* is a farrago of high sounding words in honour of King Mas'ûd, who was a drunkard, and lost in less than a decennium most of what his father's sword and policy had gained in thirty-three years. The tenor of this preface taken from the manuscript of the Royal Library in Berlin, is as follows:—

To those who lead the community of the believers in the place of the Prophet and by the help of the Word of God belongs "the king, the lord majestic and venerated, the helper of the representative of God, the furtherer of the law of God, the protector of the slaves of God, who punishes the enemies of God, Abu-Said Mas'ûd Ibn Yamîn-aldaula and 'Amîn-almilla Maḥmûd—may God give him a long life, and let him perpetually rise to glorious and memorable deeds. For a confirmation of what we here say of him lies in the fact that God, on considering the matter, restored the right (*i.e.* the right of being ruled by Mas'ûd) to his people, after it had been concealed. God brought it to light. After he had been in distress, God helped him. After he had been rejected, God raised him, and brought him the empire and the rule, after people from all sides had tried to get possession of it, speaking; 'How should he come to rule over us, as we have a better right to the rule than he?' But then they received (from God) an answer in the event (*lit.* sign) which followed. God carried out His promise relating to him (Mas'ûd), giving him the inheritance without his asking for it, as He gave the inheritance of David to Solomon without reserve. (That is, the dead King Maḥmûd had proclaimed as his successor his son Muhammad, not Mas'ûd, but the latter contested the will of his father, and in the following contest with his brother he was the winner.) If God had not chosen him, the hearts of men would not have been gained (?) for him, and the intrigues of his enemies would not have missed their aim. In short, the souls of men hastened to meet him in order to live under his shadow. The order of God was an act of predestination, and his becoming king was written in the Book of Books in heaven (from all eternity).

"He—may God make his rule everlasting!—has conferred upon me a favour which was a high distinction to me, and has placed me under the obligation of everlasting gratitude. For although a benefactor may dispense with the thank-offerings for his deeds, &c., a sound heart inspires those who receive them with the fear that they might be lost (to general notice), and lays upon them the obligation of spreading them and making them known in the world. But already, before I received this favour, I shared with the inhabitants of all his countries the blessings of his rule, of peace and justice. However, then the *special service* (towards his Majesty) became incumbent upon me, after (until then)

time) obeying in general (his Majesty) had been incumbent on me. (This means, probably, that Mas'ûd conferred a special benefit (a pension?) on the author, not immediately after he had come to the throne, but some time later.) Is it not he who has enabled me for the rest of my life (Alberuni was then sixty-one years old) to devote myself entirely to the service of science, as he let me dwell under the shadow of his power and let the cloud of his favour rain on me, always personally distinguishing and befriending me, &c? And with regard to this (the favour conferred upon me), he has deigned to send his orders to the treasury and the ministry, which certainly is the utmost that kings can do for their subjects. May God Almighty reward him both in this and in yonder world," &c.

Thereupon, finding that his Majesty did not require his actual service, and besides, finding that science stood in the highest favour with him, he composes a book on astronomy, to which he had been addicted all his life, and adorns it with the name of his Majesty, calling it *Canon Masudicus (Alkânûn Almas'ûdî)*, &c.

To put the phrases of this preface into plain language, the author was in favour with King Mas'ûd; he had access to the court—living, probably, near it—and received an income which enabled him to devote himself entirely to his scientific work. Besides, all this appears as a new state of things, the reverse of which had been the case under the king's predecessor, his father, Maḥmûd. We do not know the year in which this change in the life of Alberuni was brought about. Perhaps it was in some way connected with the fact that the chancellor, Maimandî, died A.D. 1033, and that after him on Abû-Naşr Aḥmad Ibn Muḥammad Ibn 'Abduşşamad became chancellor, who before, *i.e.* from 1000 to 1033, had administered Khwarizm, the native country of Alberuni. He and Maimandî had been political antagonists—not so he and 'Abduşşamad.

The difference of the author's condition, as it appears to have been under Mas'ûd, from what it was under Maḥmûd when he prepared the *Ἰνδικά*, is further illustrated by certain passages in the book itself. When speaking of the difficulties with which he had to grapple in his efforts to learn everything about India, he continues: "What scholar, however, has the same favourable opportunities of studying this subject as I have? That would be only the case with one to whom the grace of God accords, what it did not accord to me, a perfectly free disposal of his own doings and goings; for it has never fallen to my lot in my own doings and goings to be perfectly independent, nor to be invested with sufficient power to dispose and to order as I thought best. However, I thank God for that which He has bestowed upon me, and which must be considered as sufficient for the purpose" (i. 24). The lines seem to say that the author, both at Ghazna and in India, at Multân, Peshâvar, &c., had the opportunity of conversing with pandits, of procuring their help, and of buying books; that, however, in other directions he was not his own master, but had to obey a higher will; and lastly, that he was not a man in authority.

In another place (i. 152) he explains that art and science require the protection of kings. "For the king alone could free the minds of scholars from the daily anxieties for the necessities of life, and 'stimulate their energies to earn more fame and favour, the yearning for which is the pith and marrow of human nature. The present times, however, are not of this kind. They are the very opposite, and therefore it is quite impossible that a new science or any new kind of research should arise in our day. What we have of sciences is nothing but the scanty remains of bygone better times." Compare with this a dictum quoted (i. 188): "The scholars are well aware of the use of money, but the rich are ignorant of the nobility of science."

These are not the words of an author who basks in the sunshine of royal protection. The time he speaks of is the time of Maḥmûd, and it is Maḥmûd whom he accuses of having failed in the duties of a protector of art and science imposed upon him by his royal office. Firdausî, in his satire (Mohl, *préf.* p. xiv.), calls him "*un roi qui n'a ni foi ni hi ni manieres*" (*royales*); and he says: "*Si le roi avait été un homme digne de renom, il aurait honore le savoir,*" &c. It is most remarkable to what degree

Firdausî and Alberuni agree in their judgment of the king. To neither of them had he been a Mæcenas

—In the absence of positive information, we have tried to form a chain of combinations from which we may infer, with a tolerable degree of certainty, that our author, during the thirteen years of his life from 1017 to 1030, after he had been carried from his native country to the centre of Maḥmûd's realm, did not enjoy the favours of the king and his leading men; that he stayed in different parts of India (as a companion of the princes of his native country?), probably in the character of a hostage or political prisoner kept on honourable terms; that he spent his leisure in the study of India; and that he had no official inducement or encouragement for this study, nor any hope of royal reward.

A radical change in all this takes place with the accession of Mas'ûd. There is no more complaint of the time and its ruler. Alberuni is all glee and exultation about the royal favours and support accorded to him and to his studies. He now wrote the greatest work of his life,¹ and with a swelling heart and overflowing words he proclaims in the preface the praise of his benefactor. Living in Ghazna, he seems to have forgotten India to a great extent. For in the *Canon Masudicus* he rarely refers to India; its chapter on Hindu eras does not prove any progress of his studies beyond that which he exhibits in the 'Ἰνδικά, and at the end of it he is even capable of confounding the era of the astronomers, as used in the *Khaṇḍakhadyaka* of Brahmagupta, with the Guptakâla.

If the author and his countrymen had suffered and were still suffering from the oppression of King Maḥmûd, the Hindus were in the same position, and perhaps it was this community of misfortune which inspired him with sympathy for them. And certainly the Hindus and their world of thought have a paramount, fascinating interest for him, and he inquires with the greatest predilection into every Indian subject, howsoever heathenish it may be as though he were treating of the most important questions for the souls of Muhammadans—of free-will and predestination, of future reward and punishment, of the creation or eternity of the Word of God, &c. To Maḥmûd the Hindus were infidels to be dispatched to hell as soon as they refused to be plundered. To go on expeditions and to fill the treasury with gold, not to make lasting conquests of territories, was the real object of his famous expeditions; and it was with this view that he cut his way through enormous distances to the richest temples of India at Tanêshar, Mathurâ, Kanoj, and Somanâth.

To Alberuni the Hindus were excellent philosophers, good mathematicians and astronomers though he naïvely believes himself to be superior to them, and disdains to be put on a level with them (i. 23).¹ He does not conceal whatever he considers wrong and unpractical with them, but he duly appreciates their mental achievements, takes the greatest pains to appropriate them to himself, even such as could not be of any use to him or to his readers, *e.g.* Sanskrit metrics; and whenever he hits upon something that is noble and grand both in science and in practical life, he never fails to lay it before his readers with warm-hearted words of approbation. Speaking of the construction of the ponds at holy bathing-places, he says: "In this they have attained a very high degree of art, so that our people (the Muslims), when they see them, wonder at them, and are unable to describe them, much less to construct anything like them" (ii. 144).

Apparently Alberuni felt a strong inclination towards Indian philosophy. He seems to have thought that the philosophers both in ancient Greece and India, whom he most carefully and repeatedly distinguishes from the ignorant, image-loving crowd, held in reality the very same ideas, the same as seem to have been his own, *i.e.* those of a pure monotheism; that, in fact, originally all men were alike pure and virtuous, worshipping one sole Almighty God, but that the dark passions of the crowd in the course of time had given rise to the difference of religion, of philosophical and political persuasions, and of idolatry. "The first cause of idolatry was the desire of commemorating the dead and of consoling the living; but on this basis it has developed and has finally become a false and pernicious abuse" (i. 124).

He seems to have revelled in the pure theories of the *Bhagavadgîta*, and it deserves to be noticed

that he twice mentions the saying of Vyâsa, "Learn twenty-five (*i.e.*, the elements of existence) distinctions, &c. Afterwards adhere to whatever religion you like; your end will be salvation" (i. 4 and also i. 104). In one case he even goes so far as to speak of Hindu scholars as "*enjoying the help of God*" which to a Muslim means as much as *inspired by God, guided by divine inspiration* (ii. 108). These words are an addition of the author's in his paraphrase of the *Brihatsaṁhitâ* of Varâhamihira v. 8. There can be scarcely any doubt that Muslims of later times would have found fault with him for going to such length in his interest for those heathenish doctrines, and it is a singular fact that Alberuni wrote under a prince who burned and impaled the Karmatians (*cf note* to i. 31).

Still he was a Muslim; whether Sunnî or, Shî'a cannot be gathered from the **Ἰνδικά**. He sometimes takes an occasion for pointing out to the reader the superiority of Islam over Brahmanism in India. He contrasts the democratic equality of men with the castes of India, the matrimonial law of Islam with degraded forms of it in India, the cleanliness and decency of Muslims with filthy customs of the Hindus. With all this, his recognition of Islam is not without a tacit reserve. He dares not attack Islam, but he attacks the Arabs. In his work on chronology he reproaches the ancient Muslims with having destroyed the civilisation of Eran, and gives us to understand that the ancient Arabs were certainly nothing better than the Zoroastrian Eranians. So too in the **Ἰνδικά** whenever he speaks of the dark side in Hindu life, he at once turns round sharply to compare the manners of the ancient Arabs and to declare that they were quite as bad, if not worse. This could only be meant as a hint to the Muslim reader not to be too haughty towards the poor bewildered Hindu, trodden down by the savage hordes of King Maḥmûd, and not to forget that the founders of Islam, too, were certainly no angels.

Independent in his thoughts about religion and philosophy, he is a friend of clear, determined and manly words. He abhors half-truths, veiled words, and wavering action. Everywhere he comes forward as a champion of his conviction with the courage of a man. As in religion and philosophy, so too in politics. There are some remarkable sentences of political philosophy in the introductions to chapters ix. and lxxi. As a politician of a highly conservative stamp, he stands up for throne and altar and declares that "their union represents the highest development of human society, all that men can possibly desire" (i. 99). He is capable of admiring the mildness of the law of the Gospel: "To offer to him who has beaten your cheek the other cheek also, to bless your enemy and to pray for him. Upon my life, this is a noble philosophy; but the people of this world are not all philosophers. Most of them are ignorant and erring, who cannot be kept on the straight road save by the sword and the whip. And indeed, ever since Constantine the Victorious became a Christian, both sword and whip have ever been employed, for with them it would be impossible to rule" (ii. 161). Although a scholar by profession he is capable of taking the practical side of a case, and he applauds the Khalif Mu'âviya for having sold the golden gods of Sicily to the princes of Sindh for money's worth, instead of destroying them as heathen abominations, as bigoted Muslims would probably have liked him to do. His preaching the union of throne and altar does not prevent him from speaking with undisguised contempt of the "preconcerted tricks of the priests" having the purpose of entralling the ignorant crowd (i. 123).

He is a stern judge both of himself and of others. Himself perfectly sincere, it is sincerity, which he demands from others. Whenever he does not fully understand a subject, or only knows part of it, he will at once tell the reader so, either asking the reader's pardon for his ignorance, or promising, though a man of fifty-eight years, to continue his labours and to publish their results in time, though he were acting under a moral responsibility to the public. He always sharply draws the limits of his knowledge; and although he has only a smattering of the metrical system of the Hindus, he communicates whatever little he knows, guided by the principle that the best must not be the enemy of the better (i. 200, 6-9), as though he were afraid that he should not live long enough to finish the study in question. He is not a friend of those who "hate to avow their ignorance by a frank *I do not know*" (i. 177), and he is roused to strong indignation whenever he meets with want of sincerity. If Brahmagupta

teaches two theories of the eclipses, the popular one of the dragon Râhu's devouring the luminous body, and the scientific one, he certainly committed the sin against conscience from undue concessions to the priests of the nation, and from fear of a fate like that which befell Socrates when he came into collision with the persuasions of the majority of his countrymen. Cf. Chapter lix. In another place he accuses Brahmagupta of injustice and rudeness to his predecessor, Aryabhata (i. 376). He finds in the works of Varâhamihira by the side of honest scientific work sentences which sound to him "like the ravings of a madman" (ii. 117), but he is kind enough to suggest that behind those passages there is perhaps an esoteric meaning, unknown to him, but more to the credit of the author. When, however, Varâhamihira seems to exceed all limits of common sense, Alberuni thinks that "to suppress things silence is the only proper answer" (ii. 114).

His professional zeal, and the principle that *learning is the fruit of repetition* (ii. 198), sometimes induce him to indulge in repetitions, and his thorough honesty sometimes misleads him to use harsh and even rude words. He cordially hates the verbosity of Indian authors or versifiers,¹ who use lots of words where a single one would be sufficient. He calls it "mere nonsense—a means of keeping people in the dark and throwing an air of mystery about the subject. And in any case this copiousness (many words denoting the same thing) offers painful difficulties to those who want to learn the whole language, and only results in a sheer waste of time" (i. 229, 299, 19). He twice explains the origin of the Dîbajat, *i.e.* Maldives and Laccadives (I, 233; ii. 106); those the configuration of the borders of the Indian Ocean (i. 197, 270).

Whenever he suspects humbug, he is not backward in calling it by the right name. Thinking of the horrid practices of Rasâyana, *i.e.* the art of making gold, of making old people young, &c., he bursts out into sarcastic words which are more coarse in the original than in my translation (i. 189). In eloquent words he utters his indignation on the same subject (i. 193): "The greediness of the ignorant Hindu princes for gold-making does not know any limit," &c. There is a spark of grim humour in his words on i, 237, where he criticises the cosmographic ravings of a Hindu author: "We, on our part, found it already troublesome enough to enumerate all the seven seas, together with the seven earths, and now this author thinks he can make the subject more easy and pleasant to us by inventing some more earths below those already enumerated by ourselves!" And when jugglers from Kanauj lectured him on chronology, the stern scholar seems to have been moved to something like a grin. "I used great care in examining every single one of them, in repeating the same questions at different times in different order and context. But lo! what different answers did I get! God is all-wise" (ii. 129).

In the opening of his book Alberuni gives an account of the circumstances which suggested to him the idea of writing the Ἰνδικά. Once the conversation with a friend of his, else unknown, ran on to the then existing literature on the history of religion and philosophy, its merits and demerits. When, in particular, the literature on the belief of the Hindus came to be criticised, Alberuni maintained that a good deal of it was secondhand and thoroughly uncritical. To verify the matter, his friend once more examined the books in question, which results in his agreeing with our author, and his asking him to fill up the gap in the Arabic literature of the time. The book he has produced is not a polemical one. He will not try to convert the Hindus, nor lend a direct help to missionary zealots. He will simply describe Hinduism without identifying himself with it. He takes care to inform the reader that *he* is not responsible for whatsoever repugnant detail he has to relate, but the Hindus themselves. He gives a repertory of information on Indian subjects, destined for the use of those who lived in peaceable intercourse with them, and wished to have an insight into their mode and world of thought (i. 7; ii. 246).

The author has nothing in common with the Muhammadan Ghâzî who wanted to convert the Hindus or to kill them, and his book scarcely reminds the reader of the incessant war between Islam and India, during which it had been prepared, and by which the possibility of writing such a book had first been given. It is like a magic island of quiet, impartial research in the midst of a world

clashing swords, burning towns, and plundered temples. The object which the author had in view, and never for a moment lost sight of, was to afford the necessary information and training to “*any one* (Islam) *who wants to converse with the Hindus, and to discuss with them questions of religion, science or literature, on the very basis of their own civilisation*” (ii. 246).

It is difficult to say what kind of readers Alberuni had, or expected to have, not only for the *Ἰνδικά*, but for all his other publications on Indian subjects. Probably educated, and not bigoted fanatical Muslims in Sindh, in parts of the Panjab, where they were living by the side of Hindus and in daily intercourse with them; perhaps, also, for such in Kabul, the suburb of which had still a Hindu population in the second half of the tenth century, Ghazna, and other parts of Afghanistan. When speaking of the *Pulisasiddhanta*, a standard work on astronomy, he says: “A translation of his (Pulisa’s) whole work into Arabic has not hitherto yet been undertaken, because in his mathematical problems there is an evident religious and theological tendency”¹ (i. 375). He does not tell us what the particular tendency was to which the readers objected, but we learn so much from this note that in his time, and probably also in his neighbourhood, there were circles of educated men who had an interest in getting the scientific works of India translated into Arabic, who at the same time were sufficiently familiar with the subject-matter to criticise the various representations of the same subject, and to give the preference to one, to the exclusion of another. That our author had a certain public among Hindus seems to be indicated by the fact that he composed some publications for people in Kashmir. *cf.* preface to the edition of the text, p. xx. These relations to Kashmir are very difficult to understand as Muslims had not yet conquered the country, nor entered it to any extent, and as the author himself (i. 206) relates that it was closed to intercourse with all strangers save a few Jews. Whatever the interest of Muslims for the literature of and on India may have been, we are under the impression that this kind of literature has never taken deep root; for after Alberuni’s death, in A.D. 1048, there is no more original work in this field; and even Alberuni, when he wrote, was quite alone in the field. Enumerating the difficulties which beset his study of India, he says: “I found it very hard to work in the subject, although I have a great liking for it, *in which respect I stand quite alone in my time,*” &c. (i. 24). And certainly we do not know of any Indianist like him, before his time or after.

In general it is the method of our author not to speak himself, but to let the Hindus speak, giving extensive quotations from their classical authors. He presents a picture of Indian civilisation as painted by the Hindus themselves. Many chapters, not all, open with a short characteristic introduction of a general nature. The body of most chapters consists of three parts. The first is a *précis* of the question, as the author understands it. The second part brings forward the doctrines of the Hindu, with quotations from Sanskrit books in the chapters on religion, philosophy, astronomy, and astrology, and other kinds of information which had been communicated to him by word of mouth, or things which he had himself observed in the chapters on literature, historic chronology, geography, law, manners, and customs. In the third part he does the same as Megasthenes had already done; he tries to bring the sometimes very exotic subject nearer to the understanding of his readers by comparing it with the theories of ancient Greece, and by other comparisons. As an example of this kind of arrangement, see Chapter v. In the disposition of every single chapter, as well as in the sequence of the chapters, a perspicuous, well-considered plan is apparent. There is no patchwork nor anything superfluous, and the words fit to the subject as close as possible. We seem to recognise the professional mathematician in the perspicuity and classical order throughout the whole composition, and there was scarcely an occasion for him to excuse himself, as he does at the end of Chapter i. (i. 26), for not being able everywhere strictly to adhere to the geometrical method, as he was sometimes compelled to introduce an unknown factor, because the explanation could only be given in a later part of the book.

He does not blindly accept the traditions of former ages; he wants to understand and to criticise them. He wants to sift the wheat from the chaff, and he will discard everything that militates against

the laws of nature and of reason. The reader will remember that Alberuni was also a physical scholar and had published works on most departments of natural science, optics, mechanics, mineralogy, and chemistry; *cf.* his geological speculation on the indications of India once having been a sea (i. 198) and a characteristic specimen of his natural philosophy (i. 400). That he believed in the action of the planets on the sublunary world I take for certain, though he nowhere says so. It would hardly be intelligible why he should have spent so much time and labour on the study of Greek and Indian astrology if he had not believed in the truth of the thing. He gives a sketch of Indian astrology in Chapter lxxx., because Muslim readers "are not acquainted with the Hindu methods of astrology, and have never had an opportunity of studying an Indian book" (ii. 211). Bardesanes, a Syrian philosopher and poet in the second half of the second Christian century, condemned astrology in plain and weighty words. Alberuni did not rise to this height, remaining entangled in the notions of Greek astrology.

He did not believe in alchemy, for he distinguishes between such of its practices as are of chemical or mineralogical character, and such as are intentional deceit, which he condemns in the strongest possible terms (i. 187).

He criticises manuscript tradition like a modern philologist. He sometimes supposes the text to be corrupt, and inquires into the cause of the corruption; he discusses various readings, and proposes emendations. He guesses at *lacunæ*, criticises different translations, and complains of the carelessness and ignorance of the copyists (ii. 76; i. 162-163). He is aware that Indian works, badly translated and carelessly copied by the successive copyists, very soon degenerate to such a degree that an Indian author would hardly recognise his own work, if it were presented to him in such a garb. All these complaints are perfectly true, particularly as regards the proper names. That in his essays of emendation he sometimes went astray, that, *e.g.* he was not prepared fully to do justice to Brahmagupta, will readily be excused by the fact that at his time it was next to impossible to learn Sanskrit with a sufficient degree of accuracy and completeness.

When I drew the first sketch of the life of Alberuni ten years ago, I cherished the hope that more materials for his biography would come to light in the libraries of both the East and West. This has not been the case, so far as I am aware. To gain an estimate of his character we must try to read between the lines of his books, and to glean whatever minute indications may there be found. A picture of his character cannot therefore at the present be anything but very imperfect, and a detailed appreciation of his services in the advancement of science cannot be undertaken until all the numerous works of his pen have been studied and rendered accessible to the learned world. The principal domain of his work included astronomy, mathematics, chronology, mathematical geography, physics, chemistry, and mineralogy. By the side of this professional work he composed about twenty books on India, both translations and original compositions, and a number of tales and legends, mostly derived from the ancient lore of Eran and India. As probably most valuable contributions to the historic literature of the time, we must mention his history of his native country Khwârizm, and the history of the famous sect of the Karmatians, the loss of both of which is much to be deplored.

II

The court of the Khalifs of the house of Omayya at Damascus does not seem to have been a home for literature. Except for the practical necessities of administration, they had no desire for the civilisation of Greece, Egypt, or Persia, their thoughts being engrossed by war and politics and the amassing of wealth. Probably they had a certain predilection for poetry common to all Arabs, but they did not think of encouraging historiography, much to their own disadvantage. In many ways these Arab princes

only recently emerged from the rocky wilderness of the Hijâz, and suddenly raised to imperial power, retained much of the great Bedouin Shaikh of the desert. Several of them, shunning Damascus, preferred to stay in the desert or on its border, and we may surmise that in their households at Rusâ and Khunâsara there was scarcely more thought of literature than at present in the halls of Ibn Arrashîd, the wily head of the Shammar at Hâil. The cradle of Arabic literature is not Damascus, but Bagdad, and the protection necessary for its rise and growth was afforded by the Khalifs of the house of Abbâs, whose Arab nature had been modified by the influence of Eranian civilisation during a long stay in Khurâsân.

The foundation of Arabic literature was laid between A.D. 750 and 850. It is only the traditions relating to their religion and prophet and poetry that is peculiar to the Arabs; everything else is of foreign descent. The development of a large literature, with numerous ramifications, is chiefly the work of foreigners, carried out with foreign materials, as in Rome the *origines* of the national literature mostly point to Greek sources, Greece, Persia, and India were taxed to help the sterility of the Arab mind.

What Greece has contributed by lending its Aristotle, Ptolemy, and Harpocrates is known in general. A detailed description of the influx and spread of Greek literature would mark a memorable progress in Oriental philology. Such a work may be undertaken with some chance of success by one who is familiar with the state of Greek literature at the centres of learning during the last centuries of Greek heathendom, although he would have to struggle against the lamentable fact that most Arab books of this most ancient period are lost, and probably lost for ever.

What did Persia, or rather the Sasanian empire, overrun by the Arab hordes, offer to its victors in literature? It left to the east of the Khalifate the language of administration, the use of which during the following centuries, till recent times, was probably never much discontinued. It was this Persian Sasanian language of administration which passed into the use of the smaller Eastern dynasties, reared under the Abbaside Khalifs, and became the language of literature at the court of one of those dynasties, that of the Sâmanî kings of Transoxiana and Khurasan. Thus it has come to pass that the dialect of one of the most western parts of Eran first emerged as the language of literature in its farthest east. In a similar way modern German is an offspring of the language used in the chancery of the Luxembourg emperors of Germany.

The bulk of the narrative literature, tales, legends, novels, came to the Arabs in translations from the Persian, *e.g.* the "Thousand and One Nights," the stories told by the mouth of animals, like *Kalîla and Dimna*, probably all of Buddhistic origin, portions of the national lore of Eran, taken from the *Khudâinâma*, or Lord's Book, and afterwards immortalised by Firdausî; but more than anything else love-stories. All this was the fashion under the Abbaside Khalifs, and is said to have attained the height of popularity during the rule of Almuktadir, A.D. 908-932. Besides, much favour was apparently bestowed upon didactic, parænetic compositions, mostly clothed in the garb of a testament of this or that Sasanian king or sage, *e.g.* Anushirvân and his minister Buzurjumîhr, likewise upon collections of moralistic apothegms. All this was translated from Persian, or pretended to be so. Books on the science of war, the knowledge of weapons, the veterinary art, falconry, and the various methods of divination, and some books on medicine and *de rebus venereis*, were likewise borrowed from the Persians. It is noteworthy that, on the other hand, there are very few traces of the exact sciences, such as mathematics and astronomy, among the Sasanian Persians. Either they had only little of this kind, or the Arabs did not choose to get it translated.

An author by the name of 'Alî Ibn Ziyâd Altamîmî is said to have translated from Persian a book *Zîjalshahriyâr*, which, to judge by the title, must have been a system of astronomy. It seems to have been extant when Alberuni wrote his work on chronology; *vide* "Chronology of Ancient Nations" translated, &c., by Edward Sachau, London, 1876, p. 6, and note p. 368. Perhaps it was from the

source that the famous Alkhwârizmî drew his knowledge of Persian astronomy, which he is said to have exhibited in his extract from the *Brahmasiddhânta*, composed by order of the Khalif Ma'mûn. For we are expressly told (*vide* Gildemeister, *Scriptorum Arabum de rebus Indicis loci*, &c., p. 10) that he used the *media*, i.e. the mean places of the planets as fixed by Brahmagupta, whilst in other things he deviated from him, giving the equations of the planetary revolutions according to the theories of the *Persians*, and the declination of the sun according to Ptolemy. Of what kind this Persian astronomy was we do not know, but we must assume that it was of a scientific character, based on observation and computation, else Alkhwârizmî would not have introduced its results into his own work. Of the terminology of Arabian astronomy, the word *jauzahar* = Caput draconis, is probably of Sasanian origin (*gaocithra*), as well as the word *zîj* (= canon), i.e. a collection of astronomical tables with the necessary explanations, perhaps also *kardaj*, *kardaja*, a measure in geometry equal to 1/96 of the circumference of a circle, if it be identical with the Persian *karda*, i.e. *cut*.

What India has contributed reached Bagdad by two different roads. Part has come directly in translations from the Sanskrit, part has travelled through Eran, having originally been translated from Sanskrit (Palî? Prâkrit?) into Persian, and farther from Persian into Arabic. In this way, e.g. the fables of *Kalîla and Dimna* have been communicated to the Arabs, and a book on medicine, probably the famous *Charaka*. Cf. Fihrist, p. 303.

In this communication between India and Bagdad we must not only distinguish between two different roads, but also between two different periods.

As Sindh was under the actual rule of the Khalif Mansûr (A.D. 753-774), there came embassies from that part of India to Bagdad, and among them scholars, who brought along with them two books, the *Brahmasiddhânta* of Brahmagupta (Sindhind), and his *Khandakhadyaka* (Arkand). With the help of these pandits, Alfazârî, perhaps also Yakûb Ibn Târik, translated them. Both works have been largely used, and have exercised a great influence. It was on this occasion that the Arabs first became acquainted with a scientific system of astronomy. They learned from Brahmagupta earlier than from Ptolemy.

Another influx of Hindu learning took place under Harun, A.D. 786-808. The ministerial family Barmak, then at the zenith of their power, had come with the ruling dynasty from Balkh, where an ancestor of theirs had been an official in the Buddhistic temple *Naubehâr*, i.e. *nava vihâra* = the new temple (or monastery). The name Barmak is said to be of Indian descent, meaning *paramaka*, i.e. the superior (abbot of the *vihârâ*?). Cf. Kern, *Geschichte des Buddhismus in Indien*, ii. 445, 543. Of course, the Barmak family had been converted, but their contemporaries never thought much of the profession of Islam, nor regarded it as genuine. Induced probably by family traditions, they sent scholars to India, there to study medicine and pharmacology. Besides, they engaged Hindu scholars to come to Bagdad, made them the chief physicians of their hospitals, and ordered them to translate from Sanskrit into Arabic books on medicine, pharmacology, toxicology, philosophy, astrology, and other subjects. Still in later centuries Muslim scholars sometimes travelled for the same purposes as the emissaries of the Barmak, e.g. Almuwaffak not long before Alberuni's time (*Codex Vindobonensis sive medici Abu Mansur liber fundamentorum pharmacologicis*, ed. Seligmann, Vienna, 1859, pp. 6, 1 and 15, 9).

Soon afterwards, when Sindh was no longer politically dependent upon Bagdad, all the intercourse ceased entirely. Arabic literature turned off into other channels. There is no more mention of the presence of Hindu scholars at Bagdad nor of translations of the Sanskrit. Greek learning had already won an omnipotent sway over the mind of the Arabs, being communicated to them by the labours of Nestorian physicians, the philosophers of Harrân, and Christian scholars in Syria and other parts of the Khalifate. Of the more ancient or Indo-Arabian stratum of scientific literature nothing has reached our time save a number of titles of books, many of them in such a corrupt form as to baffle a

attempts at decipherment.

Among the Hindu physicians of this time one **ابن دهن** is mentioned, *i.e.* the son of *DUN*, director of the hospital of the Barmaks in Bagdad. This name may be *Dhanya* or *Dhanin*, chosen probably on account of its etymological relationship with the name *Dhanvantari*, the name of the mythic physician of the gods in Manu's law-book and the epos (*cf.* A. Weber, *Indische Litteraturgeschichte*, pp. 284, 287,). A similar relation seems to exist between the names *Kaṅka*, that of a physician of the same period, and *Kāṅkâyana*, an authority in Indian medicine (*cf.* Weber, *l.c.*, pp. 287 note, and 288 note, 302).

The name **اثر**, that of an author of a book on drinkables, may be identical with *Atri*, mentioned as a medical author by Weber, *l. c.*, p. 288.

There was a book by one **بيدها** (also written **بيدها**) on wisdom or philosophy (*cf.* Fihrist, p. 305). According to Middle-Indian phonetics this name is = *vedavyâsa*.¹ A man of this name, also called *Vyâsa* or *Bâdarâyaṇa*, is, according to the literary tradition of India, the originator of the Vedânta school of philosophy (*cf.* Colebrooke, *Essays*, i. 352), and this will remind the reader that in the Arabian Sufism the Indian Vedânta philosophy reappears.

Further, an author **يسادبرم** *Sadbrm*,² is mentioned, unfortunately without an indication of the contents of his book. Alberuni (i. 157) mentions one *Satya* as the author of a *jataka* (*cf.* Weber, *l. c.*, p. 278), and this name is perhaps an abbreviation of that one here mentioned, *i.e.* *Satyavarman*.

A work on astrology is attributed to one **سنگھل**, *SNGHL* (*vide* Fihrist, p. 271), likewise enumerated by Alberuni in a list of names (i. 158). The Indian equivalent of this name is not certain (*cf.* note to i. 158).

There is also mentioned a book on the signs of swords by one **باجور**, probably identical with *Vyâghra*, which occurs as a name of Indian authors (*cf.* Fihrist, p. 315).

The famous Buddha legend in Christian garb, most commonly called *Joasaph and Barlaam*, bears in Fihrist, p. 300, the title **بواسف و بلوهد**. The former word is generally explained as *Bodhisattva*, although there is no law in Indian phonetics which admits the change of *sattva* to *saf*. The second name is that of Buddha's spiritual teacher and guide, in fact, his *purohita*, and with this word I am inclined to identify the signs in question, *i.e.* **بلوهد**.

What Ibn Wâḍiḥ in his chronicle (ed. By Houtsma) relates of India, on pp. 92-106, is not of much value. His words on p. 105, "the king **كوش** = *Ghoshā*, who lived in the time of Sindbâd the sage and this *Ghoshā* composed the book on the cunning of the women," are perhaps an indication of some fables of Buddhaghoshā having been translated into Arabic.

Besides books on astronomy, mathematics (**الهندى الحساب**), astrology, chiefly *jâtakas*, on medicine and pharmacology, the Arabs translated Indian works on snakes (*sarpavidyâ*), on poisons (*vishavidyâ*), on all kinds of auguring, on talismans, on the veterinary art, *de arte amandi*, numerous tales, a life of Buddha, books on logic and philosophy in general, on ethics, politics, and on the science of war. Many Arab authors took up the subjects communicated to them by the Hindus and worked them out in original compositions, commentaries, and extracts. A favourite subject of theirs was Indian mathematics, the knowledge of which became far spread by the publications of Alkindî and many others.

The smaller dynasties which in later times tore the sovereignty over certain eastern countries from the Khalifate out of the hands of the successors of Mansur and Harun, did not continue their literary commerce with India. The Banû-Laith (A.D. 872-903), owning great part of Afghanistan together with Ghazna, were the neighbours of Hindus, but their name is in no way connected with the history of Indian literature. For the Buyide princes who ruled over Western Persia and Babylonia between A.D. 932 and

1055, the fables of Kalila and Dimna were translated. Of all these princely houses, no doubt, the Samanides, who held almost the whole east of the Khalifate under their sway during 892-999, had most relations with the Hindus, those in Kabul, the Panjab, and Sindh; and their minister, Aljaihân, probably had collected much information about India. Originally the slave of the Samanides, then their general and provincial governor, Alptagîn made himself practically independent in Ghazna a few years before Alberuni was born, and his successor, Sabuktagîn, Mahmûd's father, paved the road for the war with India (i. 22), and for the lasting establishment of Islam in India.

Some of the books that had been translated under the first Abbaside Khalifs were extant in the library of Alberuni when he wrote the *'Ινδικά*, the *Brahmasiddhânta* or *Sindhind*, and the *Khaṇḍakhadyaka* or *Arkand* in the editions of Alfazârî and of Yakûb Ibn Târik, the *Charaka* in the edition of 'Alî Ibn Zain, and the *Puñchatantra* or *Kalila and Dimna*. He also used an Arabic translation of the *Karaṇasâra* by Vitteśvara (ii. 55), but we do not learn from him whether this was an old translation or a modern one made in Alberuni's time. These books offered to Alberuni—he complains of it repeatedly—the same difficulties as to us viz., besides the faults of the translators, considerable corruption of the text by the negligence of the copyists, more particularly as regards the proper names.

When Alberuni entered India, he probably had a good general knowledge of Indian mathematics, astronomy, and chronology, acquired by the study of Brahmagupta and his Arabian editors. Whether a Hindu author was his teacher and that of the Arabs in pure mathematics (المساب الهندى) is not known. Besides Alfazârî and Yakûb Ibn Târik, he learned from Alkhwârizmî, something from Abulhasan of Ahwâz, things of little value from Alkindî and Abû-Ma'shar of Balkh, and single details from the famous book of Aljaihânî. Of other sources which he has used in the *'Ινδικά*, he quotes: (1.) A Muhammadan canon called *Alharkan*, i.e. *ahargaṇa*. I cannot trace the history of the book, but I suppose that it was a practical handbook of chronology for the purpose of converting Arabian and Persian dates into Indian ones and *vice versa*, which had perhaps been necessitated by the wants of the administration under Sabuktagîn and Mahmûd. The name of the author is not mentioned. (2.) Abû Ahmad Ibn Catlaghtagîn, quoted i. 317 as having computed the latitudes of Karlî and Tâneshar.

Two other authorities on astronomical subjects are quoted, but not in relation to Indian astronomy, Muhammad Ibn Ishâk, from *Sarakhs*, ii. 15, and a book called *Ghurrat-alzîjât*, perhaps derived from an Indian source, as the name is identical with *Karaṇatilaka*. The author is perhaps Abû Muhammad Alnâib from Âmul (*cf.* note to ii. 90.)

In India Alberuni recommenced his study of Indian astronomy, this time not from translations but from Sanskrit originals, and we here meet with the remarkable fact that the works which about A.D. 770 had been the standard in India still held the same high position A.D. 1020, viz, the works of Brahmagupta. Assisted by learned pandits, he tried to translate them, as also the *Pulisiddhânta* (*vide* preface to the edition of the text, § 5), and when he composed the *'Ινδικά*, he had already come forward with several books devoted to special points of Indian astronomy. As such he quotes:—

- (1.) A treatise on the determination of the lunar stations or *nakshatras*, ii. 83.
- (2.) The *Khayâl-alkusûfaini*, which contained, probably beside other things, a description of the *Yoga* theory, ii. 208.
- (3.) A book called *The Arabic Khaṇḍakhadyaka*, on the same subject as the preceding one, ii. 208.
- (4.) A book containing a description of the *Karaṇas*, the title of which is not mentioned, ii. 194.
- (5.) A treatise on the various systems of numeration, as used by different nations, i. 174, which probably described also the related Indian subjects.
- (6.) A book called "Key of Astronomy," on the question whether the sun rotates round the earth.

or the earth round the sun, i. 277. We may suppose that in this book he had also made use of the notions of Indian astronomers.

(7.) Lastly, several publications on the different methods for the computation of geographic longitude, i. 315. He does not mention their titles, nor whether they had any relation to Hindu methods of calculation.

Perfectly at home in all departments of Indian astronomy and chronology, he began to write the *'Ινδικά*. In the chapters on these subjects he continues a literary movement which at his time had already gone on for centuries; but he surpassed his predecessors by going back upon the original Sanskrit sources, trying to check his pandits by whatever Sanskrit he had contrived to learn, by making new and more accurate translations, and by his conscientious method of testing the data of the Indian astronomers by calculation. His work represents a scientific *renaissance* in comparison with the aspirations of the scholars working in Bagdad under the first Abbaside Khalifs.

Alberuni seems to think that Indian astrology had not been transferred into the more ancient Arabic literature, as we may conclude from his introduction to Chapter lxxx.: "Our fellow-believers in these (Muslim) countries are not acquainted with the Hindu methods of astrology, and have never had an opportunity of studying an Indian book on the subject," ii. 211. We cannot prove that the works of Varâhamihira, e.g. his *Brihatsaṁhitâ* and *Laghujâtakam*, which Alberuni was translating, had already been accessible to the Arabs at the time of Mansur, but we are inclined to think that Alberuni's judgment on this head is too sweeping, for books on astrology, and particularly on *jâtaka*, had already been translated in the early days of the Abbaside rule. Cf. Fihrist, pp. 270, 271.

As regards Indian medicine, we can only say that Alberuni does not seem to have made a special study of it, for he simply uses the then current translation of *Charaka*, although complaining of its incorrectness, i. 159, 162, 382. He has translated a Sanskrit treatise on loathsome diseases into Arabic (cf. preface to the edition of the original, p. xxi. No. 18), but we do not know whether before the *'Ινδικά* or after it.

What first induced Alberuni to write the *'Ινδικά* was not the wish to enlighten his countrymen on Indian astronomy in particular, but to present them with an impartial description of the Indian theological and philosophical doctrines on a broad basis, with every detail pertaining to them. So he himself says both at the beginning and end of the book. Perhaps on this subject he could give his readers more perfectly new information than on any other, for, according to his own statement, he had in this only one predecessor, Aleransahrî. Not knowing him or that authority which *he* follows, i. Zurkân, we cannot form an estimate as to how far Alberuni's strictures on them (i. 7) are founded. Though there can hardly be any doubt that Indian philosophy in one or other of its principal forms had been communicated to the Arabs already in the first period, it seems to have been something entirely new when Alberuni produced before his compatriots or fellow believers the *Sâṁkhya* by Kapila, and the *Book of Patañjali* in good Arabic translations. It was this particular work which admirably qualified him to write the corresponding chapters of the *'Ινδικά*. The philosophy of India seems to have fascinated his mind, and the noble ideas of the *Bhagavadgîtâ* probably came near to the standard of his own persuasions. Perhaps it was he who first introduced this gem of Sanskrit literature into the world of Muslim readers.

As regards the Purânas, Alberuni was perhaps the first Muslim who took up the study of them. At all events, we cannot trace any acquaintance with them on the part of the Arabs before his time. Of the literature of fables, he knew the *Pañcatantra* in the Arabic edition of Ibn Almkaffa.

Judging Alberuni in relation to his predecessors, we come to the conclusion that his work formed a most marked progress. His description of Hindu philosophy was probably unparalleled. His system of chronology and astronomy was more complete and accurate than had ever before been given. His communications from the Purânas were probably entirely new to his readers, as also the important

chapters on literature, manners, festivals, actual geography, and the much quoted chapter on historical chronology. He once quotes Râzî, with whose works he was intimately acquainted, and some Sûfi philosophers, but from neither of them could he learn much about India.

In the following pages we give a list of the Sanskrit books quoted in the 'Ινδικά':—

Sources of the chapters on theology and philosophy: *Sâmkhya*, by Kapila; *Book of Patañjali Gîtâ*, i.e. some edition of the *Bhagavadgîtâ*.

He seems to have used more sources of a similar nature, but he does not quote from them.

Sources of a Paurânic kind: *Vishṇu-Dharma*, *Vishṇu-Purâṇa*, *Matsya-Purâṇa*, *Vâyu-Purâṇa*, *Âditya-Purâṇa*.

Sources of the chapters on astronomy, chronology, geography, and astrology: *Pulisasiddhânta*, *Brahmasiddhânta*, *Khaṇḍakhâdyaka*, *Uttarakhaṇḍakhâdyaka*, by Brahmagupta; Commentary of the *Khaṇḍakhâdyaka*, by Balabhadra, perhaps also some other work of his; *Brihatsamhitâ*, *Pañchasiddhântikâ*, *Bṛihat-jâtakam*, *Laghu-jâtakam*, by Varâhamihira; Commentary of the *Brihatsamhitâ*, a book called *Srûdhava* (perhaps *Sarvadhara*), by Utpala, from Kashmir; a book by Âryabhaṭa, junior; *Karaṇasâra*, by Vitteśvara; *Karaṇatilaka*, by Vijayanandin; *Śrîpâla*; *Book of the Rishi* (sic) *Bhuvanakośa*; *Book of the Brâhman Bhaṭṭila*; *Book of Durlabha*, from Multan; *Book of Jîvaśarman*; *Book of Samaya*; *Book of Auliatta* (?), the son of Sahâwî (?); *The Minor Mânasa*, by Puñcala; *Srûdhava* (*Sarvadhara*?), by Mahâdeva Chandrabîja; Calendar from Kashmîr.

As regards some of these authors, Śrîpâla, Jîvaśarman, Samaya (?), and Auliatta (?), the nature of the quotations leaves it uncertain whether Alberuni quoted from books of theirs or from oral communications which he had received from them.

Source on medicine: *Charaka*, in the Arabic edition of 'Ali Ibn Zain, from Tabaristan.

In the chapter on metrics, a lexicographic work by one Haribhata (?), and regarding elephants "Book on the Medicine of Elephants," are quoted.

His communications from the *Mahâbhârata* and *Râmâyana*, and the way in which he speaks of them, do not give us the impression that he had these books before him. He had some information of a Jain origin, but does not mention his source (Âryabhata, jun.?) Once he quotes Manu's *Dharmaśâstra*, but in a manner which makes me doubt whether he took the words directly from the book itself.¹

The quotations which he has made from these sources are, some of them, very extensive, e.g. those from the *Bhagavadgîtâ*. In the chapter on literature he mentions many more books than those here enumerated, but does not tell us whether he made use of them for the 'Ινδικά. Sometimes he mentions Hindu individuals as his informants, e.g. those from Somanâth, i. 161, 165, and from Kanauj, i. 165; ii. 129.

In Chapter i. the author speaks at large of the radical difference between Muslims and Hindus in everything, and tries to account for it both by the history of India and by the peculiarities of the national character of its inhabitants (i. 17 seq.). Everything in India is just the reverse of what it is in Islam, "and if ever a custom of theirs resembles one of ours, it has certainly just the opposite meaning" (i. 179). Much more certainly than to Alberuni, India would seem a land of wonders and monstrosities to most of his readers. Therefore, in order to show that there were other nations which held and hold similar notions, he compares Greek philosophy, chiefly that of Plato, and tries to illustrate Hindu notions by those of the Greeks, and thereby to bring them nearer to the understanding of his readers.

The rôle which Greek literature plays in Alberuni's work in the distant country of the Paktyes and Gandhari is a singular fact in the history of civilisation. Plato before the doors of India, perhaps India itself! A considerable portion of the then extant Greek literature had found its way into the library of Alberuni, who uses it in the most conscientious and appreciative way, and takes from

choice passages to confront Greek thought with Indian. And more than this: on the part of his reader he seems to presuppose not only that they were acquainted with them, but also gave them the credit of first-rate authorities. Not knowing Greek or Syriac, he read them in Arabic translations, some of which reflect much credit upon their authors. The books he quotes are these:—

Plato, *Phædo*.

Timæus, an edition with a commentary.

Leges. In the copy of it there was an appendix relating to the pedigree of Hippokrates.

Proclus, Commentary on *Timæus* (different from the extant one).

Aristotle, only short references to his *Physica* and *Metaphysica*.

Letter to Alexander.

Johannes Grammaticus, *Contra Proclum*.

Alexander of Aphrodisias, Commentary of Aristotle's **φυσικὴ ἀκρόασις**.

Apollonius of Tyana.

Porphyry, *Liber historiarum philosophorum* (?).

Ammonius.

Aratus, *Phænomena*, with a commentary.

Galenus, *Protrepticus*.

περὶ συνζέσεως φαρμάκων τῶν ἂ τόπους.

περὶ συνζέσεως φαρμάκων κατὰ γένη.

Commentary on the Apophthegms of Hippokrates.

De indole animæ.

Book of the Proof.

Ptolemy, *Almagest*.

Geography.

Kitâb-almanshûrât.

Pseudo-Kallisthenes, Alexander romance.

Scholia to the *Ars grammatica* of Dionysius Thrax.

A synchronistic history, resembling in part that of Johannes Malalas, in part the *Chronicon* of Eusebius. *Cf.* notes to i. 112, 105.

The other analogies which he draws, not taken from Greek, but from Zoroastrian, Christian, Jewish, Manichæan, and Sûfî sources, are not very numerous. He refers only rarely to Iranian traditions; *cf.* Index II. (Persian traditions and Zoroastrian). Most of the notes on Christian, Jewish, and Manichæan subjects may have been taken from the book of Erânshahrî (*cf.* his own words, i. 6, 7) although he knew Christianity from personal experience, and probably also from the communication of his learned friends Abulkhair Alkhamâr and Abû-Sahîl Almasîhî, both Christians from the farthest west (*cf.* *Chronologie Orientalischer Völker, Einleitung*, p. xxxii.). The interest he has in Mânî doctrines and books seems rather strange. We are not acquainted with the history of the remnants of Manichæism in those days and countries, but cannot help thinking that the quotations from Mânî "Book of Mysteries" and *Thesaurus Vivificationis* do not justify Alberuni's judgment in this direction. He seems to have seen in them venerable documents of a high antiquity, instead of the syncretist ravings of a would-be prophet.

That he was perfectly right in comparing the Sûfî philosophy—he derives the word from σοφία i. 33—with certain doctrines of the Hindus is apparent to any one who is aware of the essential identity of the systems of the Greek Neo-Pythagoreans, the Hindu Vedânta philosophers, and the Sûfî of the Muslim world. The authors whom he quotes, Abû Yazîd Albistâmî and Abû Bakr Alshiblî, are well-known representatives of Sufism. *Cf.* note to i. 87, 88.

As far as the present state of research allows one to judge, the work of Alberuni has not been continued. In astronomy he seems by his *Canon Masudicus* to represent the height, and at the same

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