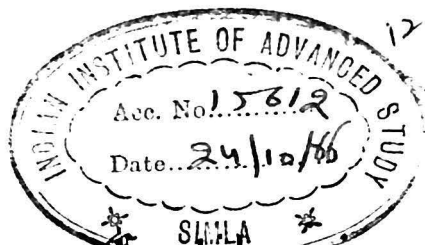




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Sad Kalima or Centiloquium
of
'Ali ibn Abi Talib

with the metrical paraphrase
of
RASHIDU'D-DIN "WATWAT."

With the name of Allah, the compassionate and compassioning!

These words begin with the name of One
Unique and free from participant;
His door of grace in season and out
Stands ope to each that is His servant.

Thus spake the Emir of the Faithful, Ali,—Peace be to him!

That Emir, whose holy being
With the Apostle's light was one,
—Who had a truth-discerning eye
Saw the twain in kinship one.

I.

Even were the veil removed I'd not increase in certitude.

Of heaven I know and of hell
With certainty meet and fit;
Were the curtain removed between
Certainty would grow no whit.

II.

People are asleep,—when they die, they become awake.

Men are heedless of their latter end,
One may liken all to the sleeping;
The harm they do and their heedlessness
Is a knowledge gained from death's keeping.

III.

People have more affinity with their own time than with their fathers.

Sons follow not their fathers' ways,
To the fashion of his time each turns,
Friends of him whom fortune favours,
Enemies of him whom it spurns.

IV.

He perishes not who knows his own quality.

Who knows his own capacity
Is safe whate'er betide;
Escapes the narrows of vanity
In mansion of joy to abide.

V.

The worth of any man is what he knows well.

Thy worth lies in that knowledge
Wherewith thou dost equip thee,
And grows in the eyes of men
As knowledge grows within thee.

VI.

Who knows himself, knows his Lord.

For the being of God, great and high,
Thou art an argument conclusive;
When thou knowest thy self, know it
Created by Him, God creative.

VII.

Whose tongue is sweet, has many friends.

If thou keep a pleasant tongue
As a brother all will love thee;
If it be ill, thy very henchmen
Will be deady foemen to thee.

VIII.

The man is hid beneath his tongue.

The man is hid beneath his tongue,
When he speaks he is found out;
If he speak good, they call him clever,
If ill, they designate him lout.

IX.

The free is in thrall to the virtuous.

If thou would'st this world's lords
Meekly stand before thee,
Do good, for well-doing
Maketh bond the free.

X.

Forebode to miser's hoard hazard or heir.

He that hath but useth not,
In his wealth he hath no share;
'Tis either ravaged by mishaps,
Or he leaves it to an heir.

XI.

Heed not the speaker, but his speech.

Be the speaker base or noble
Doth not concern his utterance;
Heed his words, what sort they are,
Not him that gives them utterance.

XII.

Impatience under trial completes affliction.

Fret not thyself in time of trial;
For fretting wholly grieves the heart;
No grief is so complete as this,
From God's reward to stand apart.

XIII.

No success with wrong-dealing.

Who seeks his end in wrongful way,
Success doth turn her rein from it;
And if success he gain, it boots not,
—No better held than lack of it!

XIV.

Praise billets not with pride.

Who behaves proudly, the people all
Openly decry his haughty ways;
While he that walks a humble gait,
All the world is loud in his praise.

XV.**Benevolence conflicts with stinginess.**

Whose practice is greed, it ne'er can be
 All men will him obedience render;
 That implies discharge of rightful due,
 —If right be not, what can they render?

XVI.**Health and gluttony go not hand in hand.**

Ne'er combined in one we see
 Health and greedy appetite;
 Make thy rule a modest fare,
 If dear life thou'dst use aright.

XVII.**Gentility mates not with boorishness.**

The boorish never can be chief
 Though high his pedigree;
 Be mannerly in every state,
 And know manners make degree.

XVIII.**There is no avoiding the forbidden where there is covetousness.**

Coveting leads to things forbidden;
 Happy he that doth not covet!
 If thou would'st shun unlawful ways,
 Withhold thyself afar from it!

XIX.**Peace of mind brooks not envy.**

Keep clear of envy, and happy be,
 For happy none can live with it;
 And if you would be wed with joy,
 Envy divorce from your hearth for it.

XX.**There is no love with contentiousness.**

Foolish are the contentious;
 For folly there is no cure.
 Whilst you can, avoid contention,
 This bane makes friendship insecure.

XXI.

Headship comports not with vengefulness.

The vengeful onslaught
Annuls supreme estate;
Avoid quest of revenge,
Or lose thy high estate.

XXII.

Crossness is poor greeting.

When thou visitest thy friend, greet him
With a smile, and conduct more pleasing;
For if thou bear thyself crossly,
Futile the aim in such visiting.

XXIII.

A true course cannot dispense with counsel.

Counsel comes to guide aright,
And has its place in each affair.
He that will not be advised,
If right result it will be rare.

XXIV.

A liar has no manliness.

Who has recourse to lies, in him
No manly beauty you'll perceive;
If he make a pact, 'tis false,
And if he promise, 'tis to deceive.

XXV.

There is no fidelity in one liable to aversion.

Seek not good faith from one prone to aversion,
These qualities will ne'er unite, forsooth;
If he make a pact, with whim of aversion
He'll surely shiver it with stone of ruth.

XXVI.

No generous quality so honourable as piety.

If thou art generous, walk piously,
For that is source of all nobility;
To stay thy hand from unlawful coin
Is better than its like in bounty.

XXVII.**No higher honour than surrender to God (Islam).**

Thou that dwellest in base unbelief,
 Thou hast lost the glory of Islam!
 If honour thou'dst have, turn Muslim,
 For no other can vie with Islam.

XXVIII.**No asylum better than abstinence.**

Thyself too weak to ward off ills,
 And with no host at thy control,
 Take refuge in abstinence, for
 Best safeguard is this pious rôle.

XXIX.**No intercessor more potent than penitence.**

Committer of unending sin,
 Unfearful of thy evil deeds,
 Repent thee God's good will to gain,
 For penitence best intercedes.

XXX.**No garb so fair as safety.**

For the man of understanding
 Safety is his best raiment;
 If safe and sound, yet not content,
 Remorse is his sole garment.

XXXI.**No malady more grievous than ignorance.**

Knowledge is a pearl fine and rare,
 But ignorance a cureless pain,
 That yieldeth only misery;
 From knowledge is but joy to gain.

XXXII.**No ailment more serious than littleness of understanding.**

Thou who day in day out art wrapt in care
 Of bodily nurture and longevity,
 An increase seek of thine understanding,
 Than lack of which is no worse malady.

XXXIII.

Thy tongue obliges thee to what thou hast accustomed it.

Accustom thy tongue to speaking good,
For as 'tis used so it utters;
Engage in evil, a time will come
And shame thee in presence of others!

XXXIV.

Man is an enemy of what he does not know.

Men are enemies of the knowledge
Which from their own defect they have not;
Though knowledge be the substance of faith,
They call that ignorance they know not.

XXXV.

God has mercy on him who knows his proper sphere, and does not exceed his limit.

Mercy divine on him who
Rein to phantasy gives not,
But well knows his own limits,
And his bound transgresses not!

XXXVI.

To repeat excuses is to recall the offence.

For thy fault once seek pardon,
There's harm in doubly suing;
And thy return with new plea
Reminds of thy offending.

XXXVII.

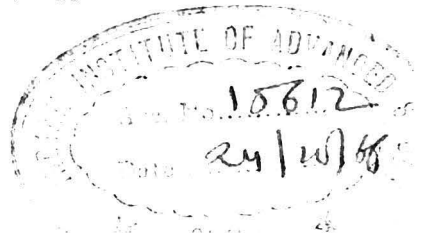
Counsel given in a gathering is reproach.

Give thy counsel privily,
For this its nature implies;
In counsel given publicly
Shame of exposure lies.

XXXVIII.

As sense grows fuller, talk declines.

He who has small stock of sense
Oft and foolishly chatters;
Whose good sense grows, few his words
With men when he foregathers.



XXXIX.**An intercessor is a wing to the seeker.**

O thou that art in quest for thy needs
 Uproot despair from out thy heart;
 That thou may'st gain thy desire of kings
 Pluck the skirt of one shall plead thy part!

XL.**Man's hypocrisy is abasement.**

Thou that dost harbour hypocrisy within,
 Into thy throat a thorn is penetrated;
 And he that maketh it practice and profession
 Is abased before Creator and created.

XLI.**The wealth of the ignorant is a garden in a midden.**

If thou hast wits, but no means,
 Of thy Maker think no ill;
 Seek not the wealth of the witless,
 'Tis a garden in a dunghill.

XLII.**Fretting is more exhausting than patience.**

In vicissitudes strive with patience,
 For that is joined to God's good will;
 Yield not to fretting, whose vexation
 Than patience holds much greater ill.

XLIII.**The petitioned is free till he gives a promise.**

When one who is entreated makes a promise,
 He places himself in uncertainty;
 He is free if he walks the way of good faith,
 Not, if he knocks at the door of treachery.

XLIV.**The greatest foe has his wiles best concealed.**

Know him for thy worst enemy
 Who makes show of sincerity;
 One has guard on the open foe,
 But not on a foe secretly,

XLV.

Who seeks what does not concern him, that which does concern him will escape him.

That which stands not to his use,
If one take thought to seek it,
Then that which is of service,
Most surely shall he lose it.

XLVI.

Who listens to scandal is himself one of the scandal-mongers.

So long you may, speak in humour
Or in earnest no slander;
Who lends his ear to calumny
Is no better than its speaker.

XLVII.

Abasement companies with greed.

Who hath desire of others' goods,
Hath anguish of body and mind;
So far as thou canst, covet not,
For abasement lies there confined.

XLVIII.

Peace of mind is associated with the entertaining of no hopes.

So long thy heart is bound to hope,
It will harbour all grief there is;
When thou dost cut off hope from men,
Thou wilt attain all peace that is.

XLIX.

Loss and greed go hand in hand.

Thou that art covetous, day and night,
With bodily anguish and heart-sore,
Get thee afar from this thy way,
The more the greed, the more loss in store.

L.

He that often jests, will not escape spite and disesteem.

He that oft and lightly jests,
From chief to herd will changed be,
In the eyes of all held cheaply,
And to all a burden be.

Sharf-un-Nisa.

(Wife of Nawab Aliwardi Khan.)

Musalman noble ladies of Bengal during the 18th century occupied a different position from what they hold now. They had not as yet come under the strict seclusion of the present day, nor did they refrain from taking an active part in the affairs of their husbands, whether peaceful or warlike. Their influence in politics and society alike was powerful and often beneficent. Such a lady was Sharf-un-nisa, the consort of Aliwardi Khan, the Nawab of Bengal.

Although Aliwardi Khan had gained the throne with ease, he was not destined to enjoy a peaceful reign. In the year following his accession, the Marathas—whom Aurangzib had slighted with the epithet of 'Mountain Rats'—invaded Bengal to enforce their claim, sanctioned by the decadent Emperor of Delhi, to the payment of *chauth* (or fourth part of the revenue of the province). The leader of the first Maratha incursion was Bhaskar Pandit, the *diwan* of Raghuji Bhonslé, Rajah of Nagpur. Aliwardi met the invaders near Bardwan and a hot action ensued. The troops of Aliwardi, worn out by their long march, broke before the Maratha onslaught and for a time the Nawab's Begam, who had taken part in the battle, was in danger of being captured. The Marathas hemmed in the Begam's elephant *Landah* and it was only the extreme valour of Musahib Khan Mohmand, son of Umar Khan the Bengal general, that saved her (*Riyaz-us-salatin*, pp. 338-9).

It is, indeed, interesting to observe that Sharf-un-nisa played the rôle of the supreme political officer whilst her husband fought the battles with the Marathas. The Begam had before this ventured into the battle of Balasore, by the side of her husband, when Aliwardi had advanced to wrest the province of Orissa from Murshid Quli Khan, the brother-in-law of Nawab Sarfaraz Khan (*Riyaz*, p. 329).*

*Durdana Begam, Nawab Sarfaraz Khan's sister, was another lady who exercised great influence on Bengal politics. She was the wife of Murshid Quli Khan, the Governor of Orissa, and was more respected in the province than her husband himself. Durdana continually incited her husband to avenge the murder of her brother, but Murshid Quli, overawed by the superior military talents and the strength of Aliwardi's forces, hesitated to encounter him. The high-spirited Princess at last threatened that if he failed to assert himself, she would abandon so tame a husband and make over her riches and the province of Orissa to Mirza Baqir Khan, her son-in-law. Ultimately Murshid Quli had to give way to wife's influence. (For life of Durdana, see *Mutaqherin*, i. 348-50, 353-55; *Riyaz-us-salatin*).

Aliwardi brought about the death of Bhaskar Pandit by treachery, whereupon Raghuji Bhoṁslé invaded Bengal with a vast army to avenge his murder. With dauntless courage and consummate military skill the Nawab opposed the freebooter and in several skirmishes vanquished him. He was, however, sorely troubled on account of the treachery of his Afghan commander, Shamshir Khan. Ghulam Husain, the author of the *Mutaqherin*, and a near relation of the Nawab, writes thus about the affair:

“I remember that once being myself seated within the inner apartment of the Nawab Begam, consort to Aliwardi Khan, he came himself unexpectedly, and having taken his seat, he seemed grieved and thoughtful. The Princess.....asked the meaning of his appearing with so clouded an aspect, he answered in these words: I know not what is the matter; but I find some uncommon appearance amongst my people. The Princess anxious about her consort’s disquietude, pitched upon two men of parts and character, and sent them as from herself, and in her own name, to Raghuji.....They had orders to procure a pacification upon an equality, if they saw any overture for it. The envoys having landed at Mir Habib’s, who was the main supporter of all Raghuji’s schemes, were introduced by him, and they delivered their message. The Maratha, who had been often vanquished...was glad of such a proposal; but Mir Habib, who was the viceroy’s mortal enemy, did not consent to it; and he turned Raghuji’s mind entirely, advising him to avail himself of his superiority in horse to give the enemy the slip, so as to arrive before him at Murshidabad, where Nawazish Muhammad Khan commanded without troops, and where mighty things might be done. Raghuji relishing the advice, took the road of Murshidabad, and was immediately followed by the Bengal army.”

In a battle fought near Katwa, Raghuji lost most of his men and was forced to leave Bengal,—very much humbled by the ill-success of his expedition.

The Nawab now disgraced and dismissed the Afghan commanders who were suspected of collusion with the Marathas. They retaliated shortly afterwards by compassing the death of Zain-ud-din Ahmad (the Governor of Patna, and son-in-law of the Nawab) and imprisoning his

wife Amina Begam. But in the battle that followed they were defeated with great slaughter and Amina was rescued.

After the tragic death of Zain-ud-din, the Nawab appointed Sayyid Ahmad Khan, his second nephew and son-in-law, as the Governor of Patna. Sayyid Ahmad began to engage in his service on suitable pensions a number of persons of distinction who had formerly belonged to the Court of Zain-ud-din and had been dispersed only by his death.

“ This liberality was not relished by Aliwardi Khan’s consort, who observed, that as the province of Azimabad was so situated as to be the main gate that afforded an entrance into Bengal, to which country no army could penetrate without its Governor’s concurrence, it was improper to leave so important a post in the hands of a person which she styled a stranger; that her eldest son-in-law, Nawazish Muhammad Khan, being a man of a weak conduct, and of weaker intellects, it became evident that on her husband’s demise, Sayyid Ahmad Khan, although her son-in-law likewise, would become a sworn enemy to her other daughters, and of course to her two grand-children, Siraj-ud-daula, and his younger brother Ikram-ud-daula. After such a chain of reasoning she concluded that so important a Government ought to be lodged in such hands as she might trust entirely. The Princess having said so much, lowered her tone of voice, and with an air of concern and affliction, she mentioned the high salaries and expensive pensions which her nephew had been bestowing upon the principal nobility of the province; and she glossed over them as upon so many misdemeanours, which took their rise in deep schemes, and concealed remote views and high-flown designs. Such a speech from a Princess, that had given her husband the highest opinion of her wisdom, could not but make a deep impression on his mind; but the Princess, as if doubting her own influence in instilling her own jealousies in her husband’s mind, took care to employ another engine, still more powerful. She taught Siraj-ud-daula to mutter publicly that if the viceroyalty of Azimabad was bestowed on Sayyid Ahmad Khan, he (Siraj) would not survive the affront, but would make away with himself. He used to say that the Bahar was his father’s property. That it came

to him by hereditary right, as a paternal estate, and ought not to be given away to others. Words to that effect, from a youth who had now become the old man's whole delight, and his very soul, could not fail to sink deep in his mind, on the first moment of their being reported to him. His whole soul centred in that young man; and to give him the least uneasiness, was a thought which he could not bear. On the other hand, he was accustomed to pay the highest deference to his consort's advice, and the tenderest regard to her wishes; and he also confessed, that after all, her opinion tended to the completion of a scheme which he had set up with her concurrence, namely, that of declaring Siraj-ud-daula heir to his estate, and his successor in all his dominions. No wonder then, if overcome now by the intreaties of a beloved consort, and unable to withstand Siraj-ud-daula's displeasure, he altered his mind with respect to his other grandson and nephew, and totally declined to fulfil his promise to him" (*Mutaqherin*, ii. 65-66).

Sharf-un-nisa, although herself a virtuous lady, was not happy in her daughters, whose frailty was notorious. Ghasiti, the eldest, made secret love to Husain Quli Khan, the favourite deputy of her husband Nawazish Muhammad (then Governor of Dacca). Through her influence Husain Quli became an important personage in the State and many of his misdeeds were forgotten.* But Husain Quli soon drifted away from Ghasiti and attached himself to Amina, her younger sister and the mother of Siraj-ud-daula, and thus made Ghasiti her enemy. A clandestine relationship, however carefully guarded, is sure to be revealed, and Sharf-un-nisa was shocked when she heard of the depravity of her daughters. She tried to turn them back from the path of vice, and to separate Husain Quli the root of the evil, from them; but being unsuccessful in her efforts, she as a last measure approached Nawab Aliwardi to ask leave to put Husain Quli to death. The Nawab only contented himself with answering that it could not be done without the consent of Nawazish Muhammad Khan, whose deputy Husain Quli was. This Sharf-un-nisa undertook to procure. She applied to her son-in-law, through the medium of his consort, Ghasiti, who now found a splendid opportunity to wreak her vengeance on her inconstant lover.

*For dismissal of Husain Quli and his reinstatement through the intercession of Ghasiti, see *Mutaqherin*, i. 422.

She joined her mother in persuading Nawazish Muhammad Khan, who weakly consented to the proposal, and Siraj caused Husain Quli to be brutally murdered at the close of the year 1754.

Sharf-un-nisa was a very kind-hearted lady. When after the seizure of Calcutta by Nawab Siraj-ud-daula the survivors of the Black Hole were sent to Murshidabad (7 July, 1756) and imprisoned, it was chiefly due to her intercession that the prisoners were liberated.†

Her last days were as dark as the beginning of her life had been bright. Siraj-ud-daula, after his reverse at Plassey, was foully murdered and Mir Jafar was raised to the *masnad* by the English. Miran, as wicked as his father, sent Sharf-un-nisa, her two daughters—Ghasiti and Amina, and Lutf-un-nisa and her young daughter to Dacca as prisoners. Sharf-un-nisa and Lutf-un-nisa, and the latter's young daughter, escaped the violent watery grave which ended the sorrows of Ghasiti and Amina. They were released through the exertions of Lord Clive, the Governor of Bengal, and came back to Murshidabad. We find the seal of Sharf-un-nisa, among others, on an *arzi* submitted to the Governor in December, 1765, begging to be granted a subsistence allowance.

Holwell has not forgotten to pay a tribute to this remarkable lady. He describes her as—

“a woman whose wisdom, magnanimity, benevolence, and every amiable quality, reflected high honor on her sex and station. She much influenced the Usurper's councils, and was ever consulted by him in every material movement in the State, except when sanguinary and treacherous measures were judged necessary, which he knew she would oppose, as she ever condemned them when perpetrated, however successful,—predicting always that such politics would end in the ruin of his family.*

Sharf-un-nisa was indeed a great lady. She, who could with the placidity of a veteran, witness a battle-field and its carnage and agony,

†“ The 16th July 1756 in the morning an old female attendant on Aliwardi Khan's Begam paid a visit to our Shaikh and discoursed half an hour with him. Overhearing part of the conversation to be favourable to us, I obtained the whole from him; and learned that, at a feast the preceding night, the Begam had solicited our liberty, and that the Suba had promised he would release us on the morrow.....Whether this was the result of his own sentiments or the consequence of his promise the night before to the old Bégam, I owe our freedom to both.” Letter from J. Z. Holwell, to William Davis, from on board the ‘ Syren ’ sloop, 28th Feby., 1757. Hill's *Bengal*, iii, 151-52.

*Holwell's *Interesting Historical Events*, Pt. I, Chap. II, pp. 170-71,

who could retain her courage even when surrounded and captured by enemies, and who never failed to stand by her husband in deadly peril, was undoubtedly a jewel of her sex. She enhanced the splendour of State functions, but was modest in her home life—a skilful nurse in sickness—a sound counsellor in adversity. Aliwardi used to pay the tenderest regard to her wishes, and she became the prime mover of all the good deeds done by him. Even the private life of the Nawab was influenced in a great measure by the charming personality of his consort, and unlike the usual run of Muhammadan Princes, Nawab Aliwardi was always extremely temperate in life and had no other wife or even slave-girl in his harem.

BRAJENDRANATH BANERJI.

* Islam and Toleration.

The theory that Islam was propagated by the sword need not be seriously considered now. It is pure fiction. The history of Islam gives a lie to it.

Was Islam tolerant and, if so, why? I propose to discuss this fascinating subject here to-day.

Early, very early in Islam, we notice Politics acting as a stimulus to religion. With the advance of years and the brightening of Islamic prospects it deepens and broadens until subjection to the will of the Prophet and not conversion to the religion of Allah becomes the watchword of the new militant State. In these circumstances—few instances apart—conversion became rather a matter of expediency than of faith. Such, undoubtedly, was the case with the conversion of the tribes *en masse!* It was a purely political expedience. Indisputable, indeed, it is that even before Islam had crossed the frontier of Arabia the religious had changed into a political movement. And this fact reveals itself in a striking manner when the young State conquers the ancient, cultured Further Asia and North Africa. The *expansion of Islam, as a State*, becomes then distinguishable from *the expansion of Islam, as a religion*.

In other words the national Arab element dominates and overpowers the universal religious element in the Islam of the Prophet.

Leaving exceptional cases aside—the Arabs never really thought of converting the subject-races either by force or by persuasion. Like the modern colonisers they constituted themselves an upper circle with a mass of paying helots under them. The Arabs—who after the fashion of modern citizenship had acquired the character of Muslims—were the only citizens of the State.

In points of *fact and of time* the political conquest of the Further Orient by the Arabs is separate and apart from its *Islamization*. Between the two there lies one to two, nay, even three centuries. True, religion initially made political organization possible but political ambition, in its turn, outweighed religious sentiment. Out of the

* Read at the Convention of Religions held at Chandernagore on the 22nd of May, 1926.

community grew the State and the State used the Arab *Völkerwanderung*, which had come into being independently of either, for its own political purposes.

A Khalid b. al-Walid, an Amr. b. al-As were, by nature, conquerors and rulers of men. They did not worry about religion. In fact they employed it, at times, in a machiavellian sense. Abdullah b. Omar and religious natures such as his, had not contributed in the least to the expansion of the *Islamic Empire*. The uniting Shibboleth was, indeed, Islam but Islam in the sense of a world-dominion of the Arabs. Expansion of Islamic religion was outside its scope and purpose for *that* would have meant the multiplication of its ruling class and the depletion of its treasury. Conversion meant reduction of tax-paying subjects.

This was obviously not to the interest of Government and the Arab overlords. From the very beginning idealists there were indeed to whom the exchequer was a matter of indifference, but what importance had they in a State built upon the contrast between Muslims and non-Muslims?

How little did the Arabs take the question of conversion into account is apparent from the fact that they had to alter and modify the entire economic basis of their financial system when conversions, in large masses, began to take place.

Already under the great statesman Al-Hajjaj remedy was sought against the disastrous consequences of the expansion of Islam as religion. The last decade of the Omayyad rule is full of measures aiming at the solution of the problem of the increasing conversions and the claims of the State. Unfortunately of the system of taxation then put into force, we have but a mere outline. We, however, do know this that henceforth the acceptance of Islam did not mean immunity from the payment of taxes nor did it mean perfect social equality with the Arabs either.

Thus under the national Arab Government of the Omayyads—interested in its exchequer and immersed in affairs temporal—toleration could not but be the order of the day. Of religious fanaticism there is not the faintest trace or indication.

Very different causes operated under the Abbasids. Then the material and intellectual superiority of the subject-races radically destroyed the ascendancy of the Arabs.

In the beginning the Arabs left the subject races alone. Then they gradually accommodated themselves to them and, finally, became entirely dependent upon them. Such was the case both in the country

and in the town. When once the military occupation of the Arabs was gone and they became landowners—as peasants or farmers or small cultivators—they became economically dependent on—or at all events—found themselves on a footing of equality with the clever and smart Neo-Converts. In these circumstances preservation of their prestige was an impossibility and toleration inevitable.

Far from propagating the faith of Islam by the sword the Arab conquerors discouraged conversion *en masse*; for conversion spelt the loss of revenue to the Government and the removal of the dividing wall between the rulers and the ruled. With the fall of the Arab national Government—the Government of the Omayyads—conversions in large numbers brought forth the dreaded results. But it has its brighter side too. It was this spirit of toleration which accounts for the cultural splendour of Islamic civilization.

Under Greek and Roman domination Greek culture, interwoven with Christianity, was transplanted to Syria and Mesopotamia. Though not assessed at its true value by the Syrians, this culture was yet taken care of by them. In the cloisters of Syria they translated not only ecclesiastical, but also almost all the profane, writers then in vogue, devoting special attention to Aristotle, Hippocrates, and Galen. The Nestorians—oppressed and persecuted in the Byzantine Empire—found a home for themselves and their learning among the Persians. In the tranquillity of their adopted homes they resumed their studies, and became special purveyors of Greek culture to the world at large. About A.D. 550 the Persian King, Khusru Nushirwan, founded an academy—in the west of Persia, at Jundashapur—for the study of medicine and philosophy. This academy—an offshot of Greek culture—continued to shed light and learning up to the time of the Abbasids. Along with the Syrian cloisters and the academy at Jundashapur, Hellenistic learning found a third home in the Mesopotamian town of Harran, whose inhabitants—loyal to their heathen faith up to the fourth century of Islam—continued till then their mathematical and astronomical studies with uninterrupted and unimpaired zeal.

From all these sources knowledge flowed to the Arabs. We cannot say precisely when Arab interest was awakened in the culture of the subject races—the Syrians, the Persians, the Indians. We notice, however, isolated efforts (notably in the occult sciences) even under the Omayyads. The most lively intellectual intercourse, of course, could only arise when the new religion became a binding link between ruler and ruled. This can hardly be dated earlier than the Abbasid ascendancy.

Under Caliph Mamun (813-833) translations began on a grand scale. Christians were sent to the Eastern Empire to find new books. Muslims, on their travels, searched for rare works, and the rich maintained a number of translators, and paid them handsomely. Many of the translators, about this time, were not intimate enough with Arabic to render Greek into it. So they translated Greek into Syriac, and got others to turn their Syriac translation into Arabic.

In these circumstances texts necessarily suffered, but the anxiety to secure correct versions led to repeated translations—each always an improvement upon the last.

Philosophical, mathematical, and medical studies were the flower and fruit of these activities. It was fortunate for the intellectual development of Islam that it took Aristotelian, and not Platonic, or its branch the neo-Platonic, philosophy as the starting-point of its intellectual voyage of discovery. Aristotle thus became the supreme teacher of the Arabs. What he taught was accepted almost unchallenged. With some slight exceptions unquestioned was his lead, or rather dictatorship. All the writings of Aristotle, then known, were done into Arabic. It is not possible to enter here into the details of the translating activities under the Caliphate. Only a brief summary of the different branches of learning can be attempted. Taking over the elements of mathematics from Euclid, the decimal system from the Indians in the ninth century, they soon made substantial progress. The adoption of the sign "zero" (Arabic "sifr") was a step of the highest importance, leading up to the so-called Arithmetic of positions. With the help of the Arab system of numbers, elementary methods of calculation were perfected; the doctrine of the properties of, and the relations between, the equal and the unequal and prime numbers, squares and cubes, was elaborated; algebra was enriched by the solution of the third and fourth degrees, with the help of geometry, and so on. About the year A.D. 820 the mathematician Al-Khwarizmi wrote a text-book of algebra in examples, and this elementary treatise—translated into Latin—was used by western scholars down to the sixteenth century.¹ How very congenial geometry was to the Arab intellect is evidenced not only by the results of their scientific works, but also by the highly-appreciated geometrical surface-decorations of Arab art. In the domain of Trigonometry the theory of sine, cosine and tangent is an heir-loom of the Arabs. The brilliant epochs of Peurbach, of Regiomontanus, of Copernicus, cannot be recalled without reminding us of the fundamental and pre-

¹ Wüstenfeld, *Übersetzungen Arabischer Werke in das Lateinische*, Göttingen, 1877.

paratory labours of the Arab mathematicians. They loved to interlace their theories with practical examples, the result being that Geodesy, the calculation of the height of mountains, of the width of valleys or the distance between two objects situated on a plane surface, reached a high state of perfection, and was particularly of service in designing aqueducts, in applying the principles of mechanics to the construction of engines of war, and of highly sensitive balances.

The determination of specific weight, learned from the Greeks, was rendered more expeditious by the introduction of new methods and improved manipulations. The compass, an invention of the Chinese, became the guide of the navigators whose destination was Ceylon, the Sunda Islands and China. From the Arabs, indeed, the Italian navigators obtained their knowledge of the use of the compass, without which the great sea-voyages of the fifteenth century would have been an impossibility.

That it was not merely practical interests which gave an impetus to the study of physical sciences is especially proved by the investigations that took place in the domain of optics. Through the study of the works of Euclid and Ptolemy, the Arabs adopted Plato's theory that vision was effected by antennae proceeding outwards from the eyes. But the majority of the Muslim scientists, adopting the views of Aristotle, taught that vision was the effect of light rays passing from the objects to the eyes. The doctrine of vision, that is to say, the question how objects appear to us in the most various circumstances, and where the image is formed, was one of intense, absorbing interest to Muslim savants. On the basis of conclusions drawn from Euclid and Ptolemy, the sense deceptions, caused by refraction, etc., were more thoroughly investigated. To the solution of the same problem was devoted the theory of optics propounded by Ibn-al-Haitham (d. 1038), the Al-Hazan of the middle ages, a theory which held sway until recent times. In addition to these investigations Ibn-al-Haitham, using Greek models, engaged in researches on spherical and parabolic mirrors, and devised a sound method of finding the focus. Roger Bacon (d. 1294) brought home to Western scholars the results of his labours. Wrongly to Roger Bacon was ascribed what, in truth, was the distinctive achievement of Ibn-al-Haitham. Other investigations of Ibn-al-Haitham concerned themselves with the camera obscura, which he was probably the first to make use of. To him, too, must be ascribed the discovery of the distinction between "umbra" and "penumbra". The treatise of Ibn-al-Haitham on optics was translated into Latin and Italian, and served

Kepler as a reliable guide in his researches. Even Leonardo Da Vinci appears to have known and used Ibn-Haitham's works.

Next to mathematics, astronomy was the favourite study of the Arabs. Since time immemorial, stars had been their guides in the desert. Already the Babylonians had made a study of the heavens, and through the stars had sought to read the future. When, by translations of the writings of Ptolemy and *Siddhanta* (the latter an Indian work on astronomy) interest in this subject was revived, the Muslims made substantial progress therein.

At various centres of the Empire observatories were established under Mamun, and by exchanging observations Islam succeeded in revising the astronomical tables of Ptolemy, and in ascertaining, with greater precision, the obliquity of the ecliptic and the orbits of the sun, the moon, and the planets. In a most ingenious manner Al-Beruni determined the magnitude of the Earth's circumference. All over the Empire, by the aid of astronomy and mathematics, Islam fixed the direction of prayer, in the mosque, towards Mekka. They knew that the light of the moon was borrowed from the sun, but went astray on the position of the earth in the universe. Two of the oldest Muslim astronomers—Al-Farghani and Al-Battani (d. 929)—were the preceptors of Europe, and under the name of Al-Farganus and Al-Batenius enjoyed high and widespread renown. The numerous astronomical terms of Arab origin (*e.g.*, Zenith, Azimuth, Nadir, etc.) testify to the indebtedness of the West to the Muslim astronomy of the Middle Ages. Inherited from an unascertainably remote antiquity, astrology, throughout the middle ages, went hand-in-hand with astronomy. Possibly astrology was a powerful incentive to the study of astronomy—certainly it was not an impediment to it. Enlightened spirits, like Avicenna, cutting themselves adrift from current superstitions, waged war against astrology as much as against alchemy. But to alchemy we cannot refuse the honour of having given an impetus to experiments that were helpful, nay enriching, to chemistry. The oldest chemists, as a body, were alchemists. This notwithstanding, in their writings we find items of chemical knowledge which cannot be shown to have existed anterior to their times. They describe the methods of melting and solution; of filtering, crystallizing, sublimating. They knew alum, saltpetre, sal-ammoniac, alkali prepared from tartar and saltpetre; and among them we first notice the knowledge of mineral acids. The increase in the number of artificially-prepared substances; the perfection of methods handed down from the Greeks; the application of these methods to most diverse materials, are the striking achievements of the Arabs in the

domain of chemistry. If, in this direction, they advanced considerably beyond the Greeks, it was due to the fact that in the place of hazy, mystical speculations they introduced objective experiments into the study of nature. From attaining full measure of success in experimental work they were, indeed, checked in the field of medical science, which they cultivated with zeal, but in which they attained only moderate success. Anatomy was forbidden, and thus Arab medical science never got beyond Galen. Different no doubt, would it have been had no such prohibition been laid on anatomy. Nevertheless, in one branch of pathology they made considerable advance. They thoroughly mastered the anatomical structure of the eye.

Could there be such a brilliant array of achievements without toleration and sympathy—without a wide outlook on life and culture—without complete realization of the unity of learning and the duty of ever and anon enlarging its boundary?

If the reversal of the policy of the Arab national Government of the Omayyads weakened the *political* life of Islam, abridging its frontier, destroying its solidarity, *that* reversal, in its turn, enriched the culture of Islam, giving it a power and making it into a force—living and palpitating—throughout the Middle Ages and beyond.

In the atmosphere of good-will and toleration has Islam thriven. Should we not then—like our forbears—cultivate good-will and toleration towards those of other Faiths; turning, in the language of John Henry Newman, from shadows of all kinds—shadows of sense, or shadows of argument and disputation, or shadows addressed to our imagination and tastes?

S. KHUDA BUKHSH.

