

ARTICLE No. 38.

The supposed sculpture of Zoroaster on the Tak-i-Bostan.

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Quite a number of hypotheses have been put forward as regards the identity of the "radiated figure" on the Tak-i-Bostan. Prof. Rawlinson and Mr. Thomas considered that this figure was meant to represent Ormazd. Sir R. Ker Porter and Flandin have thought the figure to be Zoroaster; while others, like the late Dr. Justi, have favoured its identification with Mithra. In his learned work on "Zoroaster, the Prophet of Iran," Prof. A. V. Williams Jackson concludes after reviewing the suggestions that, "so far, the case as between the Mithra and the Zoroaster theories is about evenly balanced;" but, obviously he is not quite satisfied with the proofs brought forward for the hypotheses so far advanced, since he adds that "the whole subject of the portraiture of Zoroaster requires further investigation."

In this paper I venture to put forward the suggestion that the radiated figure on the Tak represents the angel Bahram (or Verethraghna) who plays the leading part in all the miraculous legends associated with the career of Ardeshir-i-Papakan and the rise of the Sassanide dynasty.

I am fully aware that I have no pretensions to speak with authority on such a question of Iranian archaeology; but it is surely permissible even for an outsider to state a case and to support it by arguments, leaving the decision of the matter to eminent experts.

I shall begin my treatment of the subject by stating the case for my hypothesis as regards the identity of the figure with the angel Bahram; I shall then examine the grounds for and merits of the other suggestions in the field which would identify it with (a) Mithra, (b) Zoroaster and (c) Ormazd.

(1) *Strong presumption from the predominance of the angel Bahram in Sassanide tradition and History.*

It would be difficult to exaggerate the prominence of the cult of Bahram in the history, religious faith, art and numismatics of the Sassanides; and this circumstance, it is submitted, forms by itself a strong support for, and a very suitable introduction to, my suggestion as regards the identity of the figure we are studying with that angel. We have before us a group of figures symbolising the rise of the Sassanide dynasty to power and in the group there is the figure of a divinity whose identity

we have to determine. Surely, the presumption is strong, in the absence of reasons to the contrary, that the figure represents the angel who played the most prominent part in the life and faith of Ardeshir and in the worship and belief of his dynasty. In the legends regarding the very birth and childhood of Ardeshir which are referred to by writers like Moses of Chorene, an important part is played by animals like the raven, the eagle and the goat which were regarded as incarnations of Bahram (see Rawlinson's *Sixth Oriental Monarchy* page 366 note). The *Karnameh* and the *Shahnameh* both attribute the rescue of Ardeshir from great perils at the crisis of his career to this angel. On the coins of the Sassanides we often find kings, princes and even queens bearing crowns adorned with crests representing the boar, the eagle, the bull and (the horns of) the ram—all incarnations of the same angel (cf. Paruck *Sasanian Coins* No. 97, 125, 129 to 160; 173 to 178; 191-2, 295 and Herzfeld *Paikuli* vol. 1, p. 48). Nor is the fire altar ever absent from the coins.¹

It is also very significant that no less than six Kings of the dynasty bore the name of the same angel, while other minor rulers like "Shahran Baraz," "Varahran-Sapor," and "Varasgurte," (cf. Herzfeld's *Paikuli* I p. 161) have similar designations. Dr. Herzfeld also mentions names like Varaz-Peroz, Varaz-Shapuhr, Varaz-Tirdat as characteristic of the times, adding that the boar is the totem animal of the god Vihram (Op. cit. I. 130). Again on the dresses of the Kings, on the plate of the gold and silver belonging to them, and on the silks made for them, appears a royal emblem or crest which was compounded of the characteristic features of several of the incarnations of Bahram (cf. Sarre *Die Kunst des alten Persien*, 94, 95, 101, 140, 141). On the few plaques which have been fortunately² picked up on the site of Ctesiphon we discover

¹ I would refer for a moment to the bust which in some cases appears in the flames, on the reverse of Sassanian Coins which has been often supposed to be a Fravahar, and sometimes the god Hormazd (cf. Herzfeld *Paikuli* I, 82). Now I submit that in many cases this identification might be correct, but, not always so. For, in the first place, we have hardly any authoritative statement in Avesta or Pehlavi texts about Fravhars manifesting themselves in the sacrificial fire, and might have expected that such an interesting phenomenon would receive some notice in these texts. In the second place, I would suggest that in some cases at least, the figure in the flames represents the angel Bahram, since we are expressly told in the *Dadistan-i-Dinik* (Chap. 31 verse 7: S.B.E. Vol. 18 p. 65) that "when through the majesty of the creator spirits put on worldly appearances . . . then he whose patron saint (ahvo) is in the world is able to see the attending spirits in such similitude as . . . when they see a fire in which is *Varahram*." More authority should be given to an express text than to conjecture.

² We note that in plate 120 of Dr. Sarre's work the head of the royal emblem is that of a camel; in plates 94 and 102 the head is that of a boar; in plate 94 and elsewhere the emblem has the talons and the golden collar of the bird *Varengana* as required by Bahram Yasht verses

vivid and artistic representations of the ram and the eagle—similar incarnations. (Sarre *op. cit.* plate 103.) Nor is this all. The chosen and best troops of the Sassanide army were called “vartragikan,” while their leader is “Ohormizd-varaz” (Herzfeld’s *Paikuli* 1 p. 173) or “Vartragnikan-Khwatay.” Thus both the *élite* corps and its general are called after Bahram. Even the throne of Khusrau II is called by Firdausi “Mish-sar”—which has similar reference to the angel. Indeed there was scarcely an occasion of any importance when the Sassanide failed to mark his devotion to the guardian angel of his line. All these lines of argument prove that historically the position of the leading Yazata was taken by Bahram in the Sassanide epoch—just as that rôle was filled by Mithra under the earlier dynasty. Consequently, it would be strange indeed, if Bahram was found unrepresented on the bas-relief which symbolised the rise of the Sassanides to power.

(2) *Argument from Bahram Yasht, Sections 6 and 10.*

The main argument for my suggestion as regards the identification of the figure on the Tak-i-Bostan with Bahram is the striking resemblance between the figure and the description of the personal characteristics of that angel given in the Bahram Yasht. I would point out here the resemblance holds both as regards the general idea of the figure and its details.

Thus in Bahram Yasht verses 26-27 (S.B.E. Vol. 23, p. 238) we have a picture given of Bahram—“the best armed of the heavenly gods” which is unmistakably the same as the figure in our sculpture. “Verethraghna came to him the tenth time in the shape of a man, bright and beautiful, made by Mazda; he held a sword *with a golden blade, inlaid with all sorts of ornaments*. Thus did Verethraghna come, bearing the good glory made by Mazda.” This passage accounts for many of the main features of the figure we are studying—the halo of glory on its head, the sword which it holds, the “ornaments”

11, 15, 33, and 35. Many representations of that emblem have on them scales, to fulfil the requirements of the fish “Kara” in the same Yasht verse 29. In all drawings and carvings of the emblem the wings and the feathers of the tail are prominent, since it was the possession of these feathers of the bird which helped to secure victory and ensure the bearer against magical spells (Bahram Yasht, verses 34, 36 and 38 where we read how the feathers are to be utilised in order to secure victory). That the emblem was a royal one can be gathered from the same Yasht verses 39-40, where we are given the names of Kings who employed the aid of the bird Varenghana, and we are also informed that “the feather brings to its bearer the homage of men.” (Verse 36.) Nor would Khusrau II, the proudest of the Sassanides, bear on his dress any but the royal and most sacred emblem. The fact is that the whole of the Bahram Yasht could be used as a commentary to explain that emblem. I am aware that somewhat similar emblems were used under Achemenides, but in those days they did not bear the distinguishing marks of Bahram; they were later adapted to that cult.

on that sword, as well as for the martial attitude of the figure to which I would draw particular attention.

So far I have referred to the translation of this verse by Darmesteter. Other translators also interpret the text so that the description of the weapon agrees with the facts presented by the bas-relief. Spiegel has "bearing a sword with a golden hilt, adorned in every manner." The translations by Harlez and Bartholomæ do not differ in any respect.

Further, I would invite attention to the sixth section of the same Yasht where we read another description of the angel: "Verethraghna made by Ahura, came to him the sixth time, running in the shape of a beautiful youth of fifteen, shining, clear-eyed, *thin-heeled*." Spiegel translates the words as "small heels," while Bartholomæ agrees, adding in his *Wörterbuch* a note that the small heels were meant to be a mark of beauty. Small or delicate heels are thus a distinguishing feature both of the angel and of our figure. Judging by the good photographs in Sarre's book, page 42 or Jackson's *Persia Past and Present*, page 215, or by the excellent sketch furnished by Dieulafoy, we find that the feet of the radiated figure are the smallest among those of the group on the bas-relief. Even the footwear of the angelic figure appears something more shapely and flexible than the military boots worn by the royal figures. But an even more important and significant fact than the size of the feet is that it is just those "thin heels" which are resting on the supposed sun-flower. The idea of the sculptor no doubt was that such delicate heels required a soft support. Possibly also the necessity of the lotus was also suggested to the sculptor by the numerous images of Buddha and other sacred figures from India which are represented as resting on lotuses. But, while in the Indian sculptures the whole foot is supported by the flower, on the Tak-i-Bostan only the heels rest on the flower, thus emphasising once more the idea of the "small or delicate heels."¹

¹ I have emphasised the fact of Bahram (the Mars of Persia) possessing "small" or "delicate" heels; for, besides serving our immediate purpose of identifying the figure which we are studying, it carries us further, and shows us a curious similarity in a certain detail between the "*heldensaga*" of Iran, Greece, and India. We all know that Achilles was vulnerable only in his heels; so also in the Bahram Yasht chapter 6 the angel Bahram or Mars is endowed with thin or delicate heels. But there is also another traditional hero of the Indo-Iranian mythology, Gandarewa—the spirit of the deep (called the "golden heeled") in the Keresaspa saga, who is also vulnerable in the same region. For, after a conflict of nine days Keresaspa finds no other way of overcoming him, than by grasping the sole of his foot and flaying off his skin. (Yasht XIX. 41. Pahlavi Rivayat in S.B.E. XVIII. 375. Carnoy, *Iranian Mythology* Page 325). In this connection, Prof. Taraporewalla of the Calcutta University has drawn my attention to the fact that in Indian Mythology Krishna is represented as having a vulnerable heel through which he was shot by a huntsman. Here are unexplained coincidences



The radiated Figure on the Tak-i-Bostan (Reproduced by kind permission of The MacMillan Company, from "Persia Past and Present," by A. V. Williams Jackson).

What I venture to infer is that the sculptor of the figure on the Tak-i-Bostan having before him the task of representing the angel Bahram, paid due regard to both human incarnations of that angel as given in the Yasht, and combined these two in a single picture giving it the manly strength and ornamented sword of the warrior described in section 10 and the youthful appearance, light beard and moustache and delicate feet of the person described in section 6. Consequently, he portrayed on the head of the figure that "Glory made by Mazda" which is insisted on throughout the Yasht as the appanage of Bahram as an angel. It is obviously a compromise portrait of the angel based on the two passages in the Yasht.

I might be allowed to quote yet another passage from the Bahram Yasht, which will cover some other features in the bas-relief. The 63rd verse of that Yasht describes the angel Bahram as one who "binds the hands, confounds the eye-sight, takes the hearing from the ears of" sinners who "can no longer move their feet." This is an apt description of the awful plight of the fallen Artabanus in the bas-relief.

In general, it might be remarked, the Bahram Yasht seems to be the Yasht most striking in its accumulation of scenic effects. Each section brings up some characteristic picture of strength and virility, and in each case, this exhibition of energy is followed up by the chorus-like words repeated at the end:—"Thus did he come, bearing the good Glory made by Mazda." In the cult of this war-like angel, a succession of rich scenic effects must have been produced before the mental vision of the votaries and each of these scenes must have roused that admiring and enthusiastic response or chorus.

(3) Corroboration of the Hypothesis from the Karnameh.

As by general consent one of the figures on the bas-relief is that of Ardeshir I, it is obvious that the highest authority at our disposal for the interpretation of the relief and the identification of the figures on it is the Karnameh or biography of Ardeshir. The Karnameh belongs to the Sassanide age, and its guidance is equally valuable to whatever date in that epoch we ascribe the construction of the bas-relief.

Now, it is noteworthy that in the Karnameh *there is no mention of the angel Mithra*, while Ardeshir is made habitually to ascribe all success or happiness that he achieves to the "Glory of the Kayanians" and the "Victorious King of the Sacred Fires" (viz. the Atash-i-Vahram) jointly. Thus, in Darab Dastur Peshotan Sanjana's edition of the Karnameh, Chapter IV Section 15, the victory over Artabanus is ascribed

and resemblances worthy of being treated and explained by a *savant* of the learning and genius of Sir James Frazer.

to the glory of Kayans. In Chapter VII Section I the rescue of Ardeshir from the Kerman army is due to the glory of the Kayans; similarly in Chapter III Section 15 and 20 his rescue from the pursuit by Artabanus is also ascribed to the same glory. In Chapter X sections 16 and 17, on seeing his son safe Ardeshir gives thanks to the glory of Kayans and to "Victorious King of the sacred fires" (viz. Vahram) and he establishes an Atash-i-Vahram on that occasion. In Chapter VIII section 17, on the conquest of Kerman, he causes an Atash-i-Vahram to be established there. Again, the Persian name of the city built by Ardeshir after his victory over Artabanus was Khorreh-i-Ardeshir.

Thus, from the Karnameh we might infer that the figure with the halo on the bas-relief would be either the Glory of Kayans or Bahram. But the Glory of Kayans could, obviously, not be portrayed as a human figure; for it was only an attribute passing from certain historical personages to others e.g. Yima, Keresasp or Kai Khusro. It is so far from having a fixed and definite human shape that it sometimes becomes identified with an arm of the sea or a bird (Zamyad Yasht 35, 56). Hence it was only possible to form an image of the angel Bahram on the bas-relief, but bearing the halo of the glory. For, there had been going on a syncretism of the Glory (Khvarenangho) and Bahram, and a consolidation or mixing up of their attributes and incarnations. Thus in the Zamyad Yasht itself (verse 35) the Glory assumed "the shape of a Varaghna bird"—which is also an incarnation of the angel Bahram (Bahram Yasht 18-21). This identification of the two was also recognised by the Karnameh; for when the Glory appears to rescue Ardeshir from the pursuit of Artabanus it assumes the shape of a ram or an eagle (Karnameh Chapter III, Section 1120) which are other incarnations of Bahram. The figure on the Tak-i-Bostan is, therefore, that of Bahram, but "bearing the glory," as he is recognised so often to be doing in the Bahram Yasht. This identification and syncretism of Bahram and the Glory of Kayans was carried to its logical conclusion after the fall of the Sassanides. For, in the absence of any king of the old faith, the Parsis in India argued, most logically from the premises furnished by the Bahram and the Zamyad Yashts, that the Royal Glory was residing in the fire of Bahram which they had established in India. They, therefore, conferred on it the title of "Iranshah" the King of Persia, and in that fire of Bahram the "Glory of Kayans" has been finally subsumed. It would be difficult to find another example of such a steady, deliberate and complete Syncretism.

(4) *Images of Bahram in medieval Persia.*

It is perhaps not irrelevant to point out that in Persia, in

the middle ages, images of Bahram were to be found, which were in some respects similar to the figure on the Tak-i-Bostan, and which were worshipped by Mystics who professed to adhere to the Zoroastrian tradition. Thus the Dabistan-i-Mazahib refers to temples of Bahram where his image was carved in red stone; he has a crown on his head, a sword in his right hand which hangs by his side, while in the left hand which is raised there is an iron scourge. In Sir John Malcolm's History of Persia we have the images of Bahram reproduced (Vol. I, page 186). Both the figure on the Tak and the one reproduced by Malcolm are those of young angels, with light moustache and beard, and holding up a weapon. The radiation on the head of the former figure *might* in the process of extreme artistic simplification (such as is found in the images reproduced by Malcolm) be reduced to a crown. In any case, the crown on the head of the medieval images of Bahram is much like the "turreted crown" on the reverse of many Sassanide coins (cf. Herzfeld *Paikuli*, Vol. I, page 32).

(II) THE MITHRA THEORY EXAMINED.

Coming to examine the theory which identifies the radiated figure with Mithra, we would do well to remember that the tablet on the Tak-i-Bostan is not only a representation of the transfer of the crown to the Sassanides in the person of Ardeshir or his son, but also of the fall of Parthia, or of its last prince who is drawn as prostrate under the feet of the two Sassanide Kings. But, surely, in the delineation of such a scene Mithra would be quite out of place, since he (together with the sun) was one of the chief objects of reverence to the Parthians. As Rawlinson tells us, under the Parthians "temples of the Sun abounded, where images of Mithra were the objects of worship, and the Mithraic cult was carried out with a variety of imposing ceremonies." (Rawlinson's *Seventh Great Oriental Monarchy*, page 56). Thus, to a great extent Mithra was identified with the Parthian regime, which is also proved by the number of Kings of Parthia who bore a name derived from Mithra, i.e. appropriately, Mithradates. He was obviously not the deity to preside over a scene emphasising the fall of Parthia and its dynasty; indeed, he would be quite out of place therein. Mithra could not be expected to delight in the transfer of power from a house which gloried in the name of "Mithradates" to one which rejoiced in the name of Bahram.

(1) Examination of the "Sun-flower" argument.

In support of the theory identifying the figure on the Tak-i-Bostan with Mithra, much has been made of the "sun-flower" on which the figure stands and the "mace" which he is

supposed to hold. As regards the sun-flower, however, we must have due regard not so much to our own ideas on the subject as to the sacerdotal "language of flowers" as understood by the Sassanide age. Our authority on this topic should be the Bundahish, chapter 27, verse 24, which begins by informing us that every single flower is appropriate to an angel and then lays down that "all violets" are the flowers appropriate to Mithra; the lily is sacred to Horvadam, and the water-lily to Avan," while "the myrtle and jasmine are Auharmazd's own," and "the Sisebar is Vahram's." In the presence of such a detailed and developed angelologic significance of flowers, the presence of the sun-flower at the foot of the image on the Tak does not help the Mithra theory. It might be added that we have proof that the sculptors of the Tak-i-Bostan were aware of the above-mentioned allocation of particular flowers to particular angels; for, where they represent the goddess Ardivisura Anahita, on the capitals of that Tak they do not fail to engrave by her side the water-lily (cf. Rawlinson, *The Seventh Monarchy*, page 601 and Sarre *Die Kunst des alten Persien*, page 44) in strict accordance with the rule laid down by the Bundahish.

Even had the Sun-flower appertained to Mithra according to Sassanide ideas, there was neither reason nor tradition for placing it under the feet of Mithra. Thus in the case of Anahita, for example, the lily is placed at her side. Only in the case of Bahram, the flower had to be under his "thin heels" to protect them.

(2) "Mace" or "Sword"?

Nor can it be proved that the figure is bearing in his hands a "mace;" and indeed a comparison of the length and breadth of the weapon in question with the scabbard of the central figure on the Tak strongly suggests that it is a sword. As Prof. Jackson significantly observes "the grooved lines (on the staff) which run parallel with its entire length are plainly visible, and resemble the flutings on the scabbard of the middle figure" (*Persia Past and Present*, page 218). Such a close correspondence would be impossible and unmeaning between a "mace" or a "staff" and a scabbard. Similarly, Dr. J. J. Modi, the *savant* who visited the place most recently, says that the weapon in question looks much "like a long and thin chip," a description which might well apply to a straight sword such as was used in Persia in those days, but rules out the idea of a "mace." Nor is it necessary to suppose that because the weapon is held with both hands it must be a mace; for we find on various coins of the Sassanides both the King and priest is holding a sword with both hands (Cf. Coins No. 101, 194-204 and 258-277 in F. D. J. Paruck's *Sassanian coins*) brought to one side before the sacred

fire. Obviously, it was one of the ceremonial ways of holding the sword on certain religious occasions; other methods of carrying the sword on similar occasions can also be found on Sassanian coins. There appears to be a remarkable similarity between the figure on the Tak-i-Bostan and that of some of the figures on the reverse of the coins of Shapur II and Shapur III, as regards attitude, dress and the mode of carrying the sword in both hands. This might corroborate the view as to the bas-relief having been constructed in the reign of Shapur III.

(3) *The Argument from the nimbus of rays around the head of the figure.*

This has been the main argument advanced to prove that the figure in question is that of Mithra. But not much weight can be given to it. The Glory was not a characteristic feature of Mithra as distinguished from other angels. We have already seen both from the Bahram Yasht and Zamyad Yasht that the glory was closely associated and even identified with Bahram. When, for instance, the Shahnameh or the Karnameh mention the fact of the ram or the eagle helping Ardeshir in his flight from Artabanus they attribute the credit to the Glory, though the ram and the eagle are incarnations of Bahram—so close was the association of the glory and that angel in the public mind. But, if we take into account the rest of the Zoroastrian angelology, the Glory was in no way peculiar to Mithra. A reference to Stein's "Zoroastrian Deities on Indo-Scythian Coins" will show that besides Mithra other deities were pictured with the "the radiate disk"—Ardavahishto, for example. The glory was not even a distinguishing characteristic of deities, but belonged to heroes like Yima and Keresaspa of old, and even to some heroes of a much later date. Thus, in the Karnameh, we are given a vision of Papak in which he sees *Sasan with the glory of sun-rays surrounding his head*. Thus the presence of the halo or glory does not help us at all to identify the figure in question with Mithra. It is, therefore, surprising that a learned savant like Dr. Herzfeld identifies a figure on the reverse of the aureus of King Hormizd with Mithra, on the ground that it is "clearly characterised by the nimbus of sun-rays round his head" (Herzfeld's *Paikuli* I, page 46). It would be singular, to say the least, that Mithra, the God of heavenly light, should be made to stand in worship before an earthly fire.

(4) *Other Arguments for and against the Mithra theory.*

It is no part of the work of a historical enquirer to keep back evidence which supports the view which he controverts. I have in my humble way endeavoured to appreciate the merits of the theory which would identify the figure on the Tak with

Mithra. I feel that its advocates could and should have quoted in favour of their hypothesis, Mihir Yasht verses 27, 37, 43, 45, and 113, where that angel is said to "throw down the heads of those that lie to him" (as the head of Artabanus is thrown in the bas-relief); to guard the ways of those whose life is sought by men who lie unto Mithra (as the life of Ardeshir I had been sought by Artabanus) and to "confound the way of the nation that delights in havoc" (like the way of the Parthians). The view that the other two figures in the bas-relief—besides that of Ardeshir—represent Ahura and Mithra also receives some slight support from the Mihir Yasht verse 113 (S.B.E. XXIII, p. 148).

These arguments occurred to me, and I still admit their force. But the whole historical setting of the bas-relief is against the hypothesis that the figure is Mithra's. It was not possible to accuse the Parthians who were devoted to Mithra, who gave the name of Mithradates to many of their sovereigns, and in whose *regime* Mithraism started from Persia almost to conquer the world, of being among "those who lie to Mithra." Rather, indications are to be found showing that the Arsacides accused Ardeshir I of "lying to Mithra" in that he rose in rebellion against suzerain. (Karnameh chap. 9 section 5.) This fact in itself would deter Ardeshir from engraving Mithra on his bas-relief. But, further, the physical characteristics ascribed to Mithra in his Yasht (verses 67, 112, and 124) are not to be found in the figure on the Tak-i-Bostan; and we have good cause to regard with respect the knowledge of Avesta and later tradition exhibited by the sculptor of the bas-relief. Above all we have to take account of the change of emphasis in the matter of devotion to particular angels which is noticeable between the Parthian and the Sassanide epochs. This change is proved by the absence of any mention of Mithra in the Karnameh—a work saturated with religion, legends and mythology of all kinds. Nor does the Paikuli inscription refer directly or indirectly to that angel.

A great difficulty in the way of the Mithra theory is the position of the central figure of the bas-relief with his back almost turned towards the figure with the nimbus of rays. It is inconceivable that the King should turn his back towards Mithra. On the Nimrud Dagħ tablet the King has his face fully and devoutly turned towards Mithra. But, if we take the nimbus-figure to be Bahram, this difficulty disappears. For, in the Shahnameh and the Karnameh when the ram or eagle representing Bahram comes to the rescue of Ardeshir, it sits behind the back of the latter to protect him. So also in various coins of the Sassanide period, the King and the priest standing on each side of the fire assume an attitude averted from the fire. (Paruck *Sassanian Coins* No. 105–145 Herzfeld *Paikuli* Vol. I, p. 48, plate A, Fig. 20, No. 2 and 3).

(5) *Dr. Herzfeld's Suggestion.*

I have studied the suggestion advanced recently by no less a *savant* than Dr. Herzfeld, and accepted by Dr. Sarre, to the effect that the bas-relief we are examining represents the crowning of Ardeshir II by Ahuramazda assisted by Mithra. But various difficulties present themselves in the way of the acceptance of this suggestion. In the first place neither according to the Mihiryasht nor the Pehlavi texts has Mithra any special functions as regards the coronation of Kings. Originally the god of the heavenly light, he became more and more a guardian of Morals, the Knower and Preserver of truth and good faith, but without any reference to earthly royalty. In support of this we note that, while the idea of royalty and coronation occurs so often both in the Karnameh and in the many contemporary inscriptions translated so ably by Dr. Herzfeld himself, there is no mention of Mithra in any of these. There is no question as to the fact that it is Khwareno (royal glory) who should be the chief factor in the conferment or transfer of sovereignty. This glory is referred to repeatedly in the Karnameh, and thrice at least on the Paikuli inscription very pointedly. We read in the Paikuli Inscription (Vol. I, page 97) that "the King of Kings graciously from Armenia yonder to Eranshahr might return and the *majesty*, the Empire and his own throne and the royalty of his ancestors from the gods might receive." There are other references to the Khvarreh of Ardeshir I himself in that inscription which show the importance of that angel in any representations of coronations. In fact, according to all those fairly contemporary documents, the proper angel to be present on the Tak-i-Bostan relief should be the Khvarreh, whether the coronation is that of Ardeshir I or of Ardeshir II. This, I admit, but I add that this Glory is most often borne by Bahram, and is in a very important sense identified with him. Sir A. Stein has observed, we are dealing with an age of syncretisms, and there had already been among them a syncretism of Bahram and Vanainti Uparatat. In any case, there was no warrant for representing the Glory as a warrior bearing a sword; for in the Zamyad Yasht the Glory is a quality associated with angels and men and even residing in birds and arms of the sea.

I might be allowed here to submit some arguments in favour of the view that the central figure on the bas-relief is Ardeshir I (and not Ardeshir II). As we have seen, the Paikuli inscription and the Karnameh which represent genuine and general Sassanide traditions associate the Khvarreh (Glory) with Ardeshir I, almost whenever they mention him. There can hardly be a doubt that we have a representation of the Khvarreh (the nimbus or glory) on the bas-relief, and this fact makes it very likely that the adjoining figure is that of

Ardeshir I. We read in the Karnameh of the Khvarreh coming and standing very near Ardeshir I and that seems to be the subject of the picture on the bas-relief. In the second place, had a comparatively unimportant King like Ardeshir II been represented on the bas-relief, he would have taken care to add his own name with an inscription in order to commemorate himself; even Shapur II and Shapur III have not neglected that precaution on the Tak-i-Bostan. It might be safely conjectured that one of the most striking of bas-reliefs on the Tak-i-Bostan (the one we are discussing) was left without a descriptive title, only because it represented a particularly distinguished prince and a scene well known to the people from history and legend. Finally, there is the likelihood that Ardeshir II was a very old man at his accession (Herzfeld *Paikuli* I. p. 50) while the central figure on our bas-relief looks nothing like so old.

With all respect for Dr. Herzfeld, I advance the following objections to his hypothesis:—

(1) We have no warrant or authority for supposing that the right hand figure of the sculpture is Ohormizd, as that savant supposes. The figure has none of the paraphernalia and equipment of Ohormizd as drawn on other bas-reliefs. On this point one is in the happy position of quoting Dr. Herzfeld's own great authority against his suggestion. For his present suggestion is inconsistent with his own brilliant theory about the evolution of the symbol for Ahura Mazda from the Achemenian or even earlier times. Obviously, the right hand figure on our bas-relief bears no resemblance (in the matter of equipment or appearance) to the bas-relief representation of the divine at Behistun, or at the Naqsh-i-Rustam, or on the coins of Vartan I or of the Shahs of Stakhra. (Herzfeld's *Paikuli* I, 47.) The truth seems to be that the right hand figure is a human figure and its crown and appearance reminds us of the coins of Shapur I, as the head-dress and appearance of the central figure is reminiscent of the coins of Ardeshir I. (Herzfeld's *Am Tor Von Asien* p. 61.)

(2) If the two extreme figures on the bas-relief were two divine figures, as Dr. Herzfeld suggests, there would be a disharmony of a marked character in the sculpture—one god having the full divine equipment, weapon and a lotus pedestal; while the other god has no divine equipment at all, and even shares his pedestal with a mortal.

(3) There is no precedent in Achemenian or Sassanian sculpture of a god and a man standing together on a fallen figure—nor even of two royal figures standing together in that way. Indeed, the only occasion on which in Persian History two Kings triumphed together on the same foe was the case of Ardeshir I and Shapur I (conquering Artabanus jointly)—the latter fighting on the battle field of Hormuzan and distinguish-

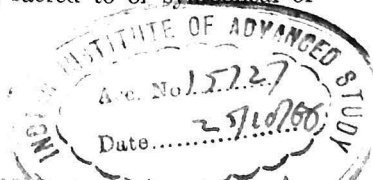
ing himself as a crown prince. This unique fact in Persian History would in itself suffice to identify the figures on the bas-relief as those of Ardeshir I and Shapur I.

(4) Ardeshir II never conquered any foe—either Iranian or foreign—and indeed he was himself deposed after four years' of precarious rule. Hence there was no occasion for him to have himself engraved on a triumphant bas-relief. His claim to any triumph was less than that of Bahram IV whom Dr. Herzfeld mentions (*Am Tor Von Asien*, p. 62), for the latter partitioned Armenia with Rome and hence had himself engraved standing on a fallen Roman.

(5) We might admit Dr. Herzfeld's contention that the bas-relief was of a later date and age than that of Ardeshir I, as is shown by the style of the sculpture (*Am Tor Von Asien*, pp. 64-66). That learned author has done a real service in drawing attention to this fact. But there would be nothing strange or out of the common in a later king erecting the bas-relief to the honour and memory of Ardeshir I who was regarded as divine by his dynasty. Such an act would be particularly appropriate in Ardeshir II who bore the name and copied the head-dress of Ardeshir I.

(6) There is good authority in later literature for the blessing of later kings by the spirit (fravahar) of Ardeshir I, the founder of the dynasty. Thus, in the *Afrin-i-Rapitvin*, we read that "*Hama-zor fravahar-i-Ardeshir-i-Babakan bad*." This phrase seems to describe well the relative position of the two right hand figures of our bas-relief; and for the conjectural idea of "Belehrung" or "Consecration" we might advisedly substitute that of "hama-zor" which has religious tradition and texts behind it. The holding of the circular emblem by two figures on various bas-reliefs might well be the symbol of "hama-zor." Thus on one relief at Naqsh-i-Rustam, Ardeshir I is "hama-zor" with Ahura-Mazda, while between the supposed tomb of Darius II and that of Darius I, King Naresh is represented as "hama-zor" with Anahita whom, as his favourite angel, he had also sculptured on the Paikuli monument. This attitude of "Hama-zor" appears in some cases to be reminiscent of the practice of "taking the hand of Bel" in Babylonian days.

We have now dealt with the main arguments for the view that the figure with the halo on the Tak-i-Bostan is the sun-god Mithra. For an excellent presentation of this view the student might be referred to Dr. Justi's "Life and Legend of Zarathushtra" in *Avesta Studies, etc., in Honour of Peshotanji Sanjana*, pp. 157-8. We have seen that the weapon borne by that figure is not the "mace" or "club" required by the Mithra theory. Nor does the "star-lotus flower" at the feet of the figure help out the theory. In the Avesta there is no hint of the star-lotus flower being sacred to or symbolical of



Mithra; and in the Pehlavi literature the lotus flower is expressly and authoritatively stated to belong to another Yazata. Dr. Justi instituted a comparison between the figure on the Tak-i-Bostan and the relief at Nimrod Dagh where Mithra is giving his hand to Antiochus of Kommagene (cf. Sarre *Die Kunst des alten Persien Taf.* 56). It would have been more appropriate to speak of a *contrast* between the two delineations—the dress and accoutrement of the angel and the attitude of the human figure towards him are quite different on the two reliefs. On the Nimrod Dagh figure, the angel's eyes are fixed steadily on his devotee and radiate spiritual influence. On the Tak-i-Bostan the god of War advances to support his favourite from behind. The only feature which is common to the two representations is the halo of rays round the head. The face of the real Mithra on the Namrud Dagh is that of a boy; he does not wear a sword but carries only a short knife; his head-dress is quite different—being the tall Phrygian cap; and there is no lotus flower at his feet which is conspicuous on the Tak-i-Bostan.

(III) DOES THE FIGURE REPRESENT ZOROASTER?

As regards the view that the figure on the Tak-i-Bostan represents Zoroaster, it needs to be emphasised that it rests on no arguments advanced for such an identification, but relies simply on a supposed "Parsi tradition." But had there really existed such a tradition worthy of the name, it would not have remained entirely neglected by such authoritative works as the *Bundahish* or Zarthusht Bahram's life of Zoroaster, or the *Shahnaméh*, or the Arab writers who have referred to the Tak-i-Bostan sculptures. Indeed, there were no materials or circumstances on which such a tradition could be based. Had there been a Zoroastrian colony residing near Kermanshah and venerating the image, or had the Zoroastrians living in Persia been making even occasional pilgrimages to the Tak, there would have been a reliable "tradition" as regards the figure. But what tradition could form about the figure in the almost complete absence of personal visits to or veneration of that image, and of any records relating to it?

We have also to remember that it was much more difficult for a Sassanide sculptor to produce an image of Zoroaster than that of any of the *Yazatas*. Indeed, the difficulties were insuperable in the way of producing a portrait or sculpture of Zoroaster which would satisfy the men of the Sassanide epoch, when Avesta and Pehlavi works were read fairly widely; for neither the Avesta nor the Pehlavi texts give us anything like a description of the personal features of the prophet. It was far easier to produce sculptures of, and to represent satisfactorily and authoritatively, many of the *Yazatas*, especially Mithra,

Bahram, Ardivisura Anahita and Ashi Vanghui who are fully described in the Yashts. Hence, in an age in which the Avesta and Pehlavi literatures were widely studied it was evident to all concerned that there were no existing materials for a representation of Zoroaster, and the formation of any traditional picture of the prophet was out of the question.

But when Avesta and Pehlavi studies declined and the matter was left to poets and romancers, a traditional portrait of Zoroaster came into existence, and is to be seen in innumerable manuscript and printed copies of the *Shahnameh*, and in some earlier printed editions of the *Khordeh Avesta*. But, this really "traditional" portrait of the prophet has little in common with the sculpture on the *Tak-i-Bostan*. In this traditional portrait, Zoroaster always appears with the fire *Mihir* *Burzin* which, according to the epic (though not according to *Bundahish*, Chapter 17, verses 5-8) he brought from heaven; he also bears a branch of his miraculous cypress, and sometimes his "book." In many of the portraits there is a halo about his head. The tradition is not only pictorial but literary—running through the *Shahnameh*, the *Sharestan-i-Chahar-Chaman* and the *Dabistan*. But, obviously, it was not accepted by the Avesta students even in the middle ages; for, Zartusht Bahram in his life of the prophet gives us no such personal description of Zoroaster.

The so-called portraits of the prophet which are in possession of the Parsis in India are easily accounted for; and there is no question of any of these representations being based on an independent tradition. The picture on the *Tak-i-Bostan* became available to them, early in the last century, through Sir R. Ker Porter's "Travels" and Sir John Malcolm's "History of Persia," together with the hint that it might represent the prophet of Iran. We note that as the result of this, most early printed copies of the *Khordeh Avesta* in Gujrati script bear the *Tak-i-Bostan* figure as a frontispiece representing Zoroaster. But the Parsis had also with them the "traditional" representation of Zoroaster in the *Shahnameh*, etc. Hence, most of the later representations of Zoroaster are composite copies of these two; and in almost all cases a lot of additional embellishment is added at the wish of the artist. The local artists have considered themselves entitled to give the reins to their imaginations; and as a result hardly any two portraits of the prophet painted or drawn in India resemble each other. Under such conditions little importance should be attached to their "traditional" portraits.

Speaking of the supposed Parsi tradition in favour of identifying the figure on the *Tak-i-Bostan* with Zoroaster, it is worth noting that a learned Parsi authority, Dr. J. J. Modi has, in his recently published *Travels in Persia* (p. 361) told us that after personally inspecting the bas-relief he is unable any

more to subscribe to that tradition. He has expressed his conviction that the place assigned to the supposed prophet in the bas-relief does not accord with the peculiar respect due to him. As I have pointed out earlier, the central figure stands fairly with his back to the figure in question; and in this connection Dr. Modi could have quoted the words ascribed to Zoroaster himself in Chapter XX, 13 of Selections of Zad-Sparam (S.B.E., Vol. XLVII, p. 154): "Whosoever takes away a sight from me, does not practise respect for me."

There are other important considerations which render the view as to the identity of our figure with Zoroaster very difficult of acceptance. In the first place, the prophet of Iran attained the venerable age of 77 when he passed away; and if the sculptor of the Tak-i-Bostan had really desired to give us his portrait, he would not have engraved such a comparatively youthful and athletic figure as we have before us. In the second place, Zoroaster was eminently a man of peace and good-will towards all, and we have no hint anywhere of any military exploits of his. It would be highly inconsistent with such general testimony, to represent him holding a heavy sword with both his hands in the bas-relief. The contrast is the more inexplicable and glaring, since only the supposed prophet bears a drawn sword, while the two other personages on the bas-relief are engaged in peaceful occupations. Whether we regard these two other personages as Ormazd and Ardeshir I (with Justi) or as Ardeshir I and Shapur I (with other authorities), the anomaly of a peaceful, old and venerable prophet alone bearing a sword and presiding over the scene in a martial attitude is obvious. But if, as I have suggested, the figure is that of the angel Bahram, it is most natural that the warrior-angel should perform such a function.

(IV) THE HYPOTHESIS IDENTIFYING THE FIGURE WITH AHURA-MAZDA.

As both Prof. Rawlinson and Mr. Thomas have suggested that the "radiated figure" is Ahura-Mazda (cf. *Seventh Oriental Monarchy*, p. 64 and *Journal of Asiatic Society*, New Series, Vol. III, p. 267, note 3), it is due to the reputation of these scholars to discuss their suggestions. I venture to submit, however, that to me their hypothesis appears to be the weakest put forward to account for the "radiated figure." What are taken to be the traditional images of Ahura-Mazda have personal characteristics very different from those of the figure on the Tak-i-Bostan. On the Parthian coins and elsewhere "Ahura-Mazda regularly appears as a bearded man in a winged disc" (Dr. A. J. Carnoy in *Iranian Mythology*, p. 342). Dr. Herzfeld has given us "the uninterrupted evolution of the Divine symbol from the Assyrian up to the Sassanian epoch" (cf.

Paikuli, Vol. I, p. 47). Then again Ahura-Mazda appears in the bas-relief at Naksh-i-Rustam in which he is represented as bestowing the insignia of royalty on Ardeshir I (cf. Ker Porter, *Travels*, Vol. I, plate 27; Flandin, plate 193; Curzon's *Persia*, Vol. II, p. 125), but there also he "has a long beard and flowing locks." Admitting for arguments' sake that these latter are the representations of Ahura-Mazda, the very youthful and in other respects different figure on the Tak-i-Bostan *obviously* cannot represent the same divinity. It is certain that Mr. Thomas himself had felt the force of this difficulty as regards his hypothesis; for, he adds, in his footnote, that on the Tak-i-Bostan "Ormazd is depicted in a new or modified form." But he furnishes no reason for such novelty or modification.

The Artistic Aspect of the Bas-relief.

Let us for a moment drop the archæological point of view and consider how the present suggestion as to the identity of the nimbus-figure with Bahram fits into the conception of the bas-relief as a work of art. For, after all, and in the main, it is an artist's conception and must be studied as such.

Suppose the view advanced here to be true that the two royal figures standing on the prostrate and fallen Parthian are those of Ardeshir I and Shapur I who are triumphing on their victory over Parthia; Ardeshir I is depicted as about to assume the sovereignty of Persia and he is just going to receive the reward of a life time of striving and fighting. In this supreme moment of the crowning of his life's ambitions and of the assurance of his son's future as well, Ardeshir feels that the sacred presence which has so often stood by him in his fights has appeared behind him to support him. To adapt the words of the *Karnameh* itself "the Glory of the Kayans which had been previously far from Ardeshir now stood near him and gradually approached nearer." If we look at the bas-relief, we see how near the glory is to Ardeshir—so near indeed that Ardeshir feels the flash of a great protecting sword held aloft in his rear and understands that the Glory is borne by its powerful co-adjutor—Bahram; for no mere glory can bear a great sword. It is this dramatic moment of this advent of Bahram with his glory to support Ardeshir that the artist of the bas-relief has meant to represent for us—it is the apotheosis of Ardeshir I.

Very appropriately the artist has selected for representation that particular moment when the angel appears on the scene of the transfer of royal power. Indeed under the bas-relief might be inscribed as its descriptive title those words which so often reverberate through the *Bahram Yasht*, and which also assert the syncretism and the inseparable association of the glory and Bahram.

avaθa ājasat vōhū X^oarenō mazda-šātem barat.

"Thus did he (Bahram) arrive (to help), bearing the good glory made by Mazda."

Certainly, the pious Zoroastrian of the Sassanian age who was versed in the legendary lore of Ardeshir's career, had no doubt, when he looked up to the bas-relief that the King owed his rise to the signal and timely help from that angel.

Conclusion.

Summarising the line of argument developed above, I venture to submit, that the most probable hypothesis is that identifying the figure on the Tak-i-Bostan with the angel Bahram. This hypothesis has in its favour the fact that in the sculpture we find—both as regards the general idea and the details—the fulfilment of the description of the physical features of that angel as laid down by the Bahram Yasht. Not only does this suggestion account for most of the features of the figure, but it is, I submit, broadbased upon the large mass of contemporary tradition and inscriptions and on all that we can learn from the Sassanide sources relevant to the problem in hand. The next strongest theory which, in my humble opinion, is the Mithra theory, seems to be much less convincing, because it is not based on such general considerations, but is grounded upon isolated circumstances like the nimbus on the head of the figure and on the supposed sun-flower at its feet. But if one or two isolated circumstances like these are to carry conviction, and to decide the problem, then a much more likely suggestion could be easily put forward. The theory could well be advanced, for example, that the figure with the halo represents Sasan (the ancestor of the Sassanides); for in the early portion of the Karnameh we read: "One night Papak saw in a dream as though the sun was shining from the head of Sasan." That text would no doubt, in a sense, account for the figure with the halo on the bas-relief; and no one could deny the propriety of the legendary ancestor of the house of Sasan appearing on a bas-relief representing the rise of his dynasty. But, as I have submitted above, isolated circumstances or coincidences cannot by themselves prove a historical case; and a solution of our problem should rest on larger and surer historical grounds. The great bas-relief of the Sassanide age should be interpreted in the light of its favourite cult and of the historical legends of the period.

I conclude by expressing the hope that distinguished Avesta scholars and archaeologists will do me the honour of examining my thesis and my arguments. The subject of our study is a fascinating one in itself, and of importance both to the Parsis and to the history of Persia, and it will no doubt secure the attention which it deserves. Meanwhile there is one local scholar to

whom I must express my obligations. But for the encouragement which I received from Prof. Taraporewalla of the Calcutta University I could never have ventured to work up a subject so remote from my own line of study. I am also obliged to him for the loan of several books from his collection and for making available to me alternative translations of the texts quoted from the Bahram Yasht.

Little-Noticed Habits of Some Birds of the District of 24-Parganas.

By SATYA CHURN LAW.

(With five diagrams)

1. *Centropus sinensis*. The Common Coucal.

The records that are available of the nidification of this bird in Northern India almost invariably point to the rains as its normal breeding period. Blanford in *Fauna of British India, Birds, Vol. III* (p. 241), writes that it "breeds chiefly in June, July, and August." Three is mentioned (in those records) as the normal number of eggs, "though four and even five are at times met with." Regarding the shape of the nest which is usually a fairly big and globular structure, Hume¹ speaks of its being domed "most commonly," but 'not always' so in India. Col. Butler² has referred to a nest being "open at the top." The nest is described as "simple, about the size of a very large round plate with a depression in the centre for the eggs."

My excursions and observations in the district of 24-Parganas lead me to conclusions which fail to tally with the records mentioned above. I find that *Centropus sinensis*, much as it signalises the advent of its breeding season by frequent hoots, is secretive to a degree and tries to hide its nesting operations from the eyes of men. It commences nesting as early as the middle of March. In April it has eggs—the usual number is four, so far as my observation goes—which hatch out towards the end of the month, and by the middle of May the young are full-fledged and able to come out of the nest. This success, however, does not invariably attend the efforts of every nesting pair, for, hampered not infrequently by the rains and storms that follow in the wake of nor'westers, so common at this time, they may have to build anew and consequently raise their brood at a later period. But a pair, which has the luck to rear its young in May, unimpeded by any accidents, apparently raises a second brood during the rains, for in July these fledglings are numerous and come frequently to our notice. The nest is built usually in bushes or thickets, not uncommonly in trees and even in grass jungle. The materials vary accord-

¹ The Nests and Eggs of Indian Birds by A. O. Hume, 2nd Ed., Vol. II. p. 402.

² *Ibid.*, p. 402.

ing to the exigency of the situation where the nest is constructed, as says Munn¹ "if in grass jungle, the nest is



A—Nest of *Centropus sinensis*: Outside view.
B—Entrance to the nest.
C—Back view of the nest.

Fig. 1.

¹ Birds of the Calcutta District by P. W. Munn. Ibis 1894, p. 56.

composed of dry grass or reeds, but if among bushes or in a tree, usually of sticks lined with grass or leaves." I have, however, come across a fairly large number of nests in trees, which are made up exclusively of cocoanut leaves (without any stick or grass) and in nine cases out of ten I have found that they are without any dome and never open at the top, but well ventilated and thoroughly clean, and the entrance is large and elliptical. It strikes me as remarkable that in a majority of these nests, though the materials (which are exclusively long strips of cocoanut leaves) are placed loosely and are never fixed firmly to or round any stout stem, the structure appears to be cleverly laid between several branches and twigs, which furnish its chief support. To illustrate my point I append a diagram of a nest which I found on the 24th March, 1926, on a lofty mango tree in Agarpura, a village in the District of 24-Parganas, about 10 miles north of Calcutta.

The sketch (Fig. 1) shows that the nest has for its support two thick mango branches (which I may for the sake of explanation call *a* and *b*), each of which splits into a number of twigs. A single twig from branch *a* supplies the main plank for the threshold to the entrance, while three other twigs from the same branch support the left-hand outer wall of the nest and two other twigs from the same branch *a* again prop up the right side of the outer wall. The entrance is also supported by another twig from branch *a*. Of the twigs which shoot off from branch *b* the two thicker ones support the right side of the outer wall, while a single twig lends support to its left side. This nest is made up entirely of loose cocoanut leaves (with a sprinkling of creeper stems and mango leaves), which are not tied firmly or twisted round any stem, twig or branch either inside the nest-wall or outside. No grass or reed was found as a nest material. The measurements of the nest are as follows:—

<i>Inside.</i>		<i>Outside.</i>	
Length ..	9"	Length ..	10½"
Breadth ..	7"	Breadth ..	8"
Height ..	10"	Height ..	17"
Circumference (outer)		..	42"

There were only two eggs in the nest on the 24th March 1926, but four were present when I came to inspect it again on the 28th,—an unusually early date. I could find no depression in the floor of this nest to serve as a receptacle for the eggs.

From the measurements cited in his 'Nests and Eggs of Indian Birds' ¹ Hume calculates that the nest "of course is not long enough to admit the whole bird, so that when sitting the tail is commonly seen projecting outside the nest." I can

¹ 2nd Ed., Vol. II, p. 400.

not imagine that a wary and secretive bird like *Centropus sinensis* is ever capable of indulging in this stupid habit which is sure to spell its own ruin. In my excursions, which are very frequent in the district of 24-Parganas, I cannot recall any single instance of a Common Coucal incubating its eggs in the attitude mentioned by Hume. On the contrary, it has often been my experience to find it sitting stealthily within the nest, which appears, more often than not, to be built purposely in a place screened from human eyes. The mere fact that the bird has a knack of erecting its tail, when it has jumped up to a perch or descended on the ground, demonstrates with what ease it can adjust itself while sitting on its eggs, so that the upraised tail can rest in contact with the inside walls of the nest without protruding outside.

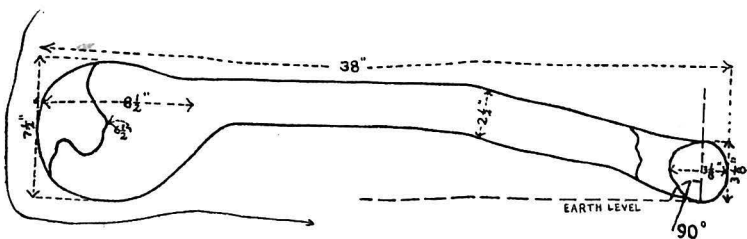
2. *Merops viridis*. The Common Indian Bee-eater.

Little notice appears to have been taken of the fact that there are certain birds which, although their sprightly habits and numerical strength in a particular district or locality keep them prominently before our gaze almost throughout the year, yet when the time comes for their nesting, disperse and slip off imperceptibly into obscurity, retiring to out-of-the way, unfrequented places, which are sometimes inaccessible to man. There are, on the other hand, certain other birds which, although they fight shy of human company for a considerable part of the year, come prominently before our eyes amidst our homesteads in the heart of a village during their nesting period. It is noteworthy that both these types of birds, however contrary may seem their behaviour in relation to man, are non-migratory residents of the aforesaid locality or district, though their temporary obscurity and re-appearance might tend to create a false impression in regard to the character of their movements. *Merops viridis* is a striking example of the former group of birds and throughout the district of 24-Parganas it is such a conspicuous figure in our countryside that one wonders how it can evade our notice for however short a period, while engaged in nidification. It is easy to realise that a bird, however familiar, which is unsocial and exclusive in its habits can in the course of its wanderings in search of a nesting site very well elude our notice. *Merops viridis* goes about in flocks and is addicted to a gregarious mode of existence, so that its congregational activities throughout the district are too glaring to be ignored. Yet, contrary to expectation, the process by which the spiriting away of a whole flock is effected appears to be shrouded in mystery. Patient observation, however, reveals that the advent of its breeding season early in March tends to set on foot a disruptive motion amongst the flock, which splits into very small units, each hieing silently to their nesting area. This area lies, more often than not, in an unfrequented part of the village which obviously affords sufficient immunity from

intrusion or depredation by enemies. *Merops viridis* constructs its nest by digging a hole in the ground. *Bāndhs* or embankments, surfaces of *nullahs*, cuttings or ditches, cliffs, banks, mud-walls and raised mud-boundaries between orchards are the places where one should look for these nests; but it is not unusual to come across them in perfectly level ground, such as barren or uncultivated meadows and fallow lands. Two or three pairs of these birds and sometimes even a single couple will now be seen strenuously at work, each couple digging its nest at some distance from the other. It is noteworthy that though disbandment at this season is of distinct advantage to the perpetuation of the race, this custom does not appear to be uniformly followed; for instances are not rare even in the district of 24-Parganas, where after the process of dispersal has been completed, the units re-unite in their breeding area and thereby revive the old congregation. The high bank of a canal or stream, or the steep face of an embankment will sometimes afford a congenial site for such re-union and many a nesting couple of *Merops viridis* will be noticed early in April to arrive at the scene in regular succession, swelling the rank of those of their kin which are now busily engaged in digging their nest-holes. Several of these holes are dug in close proximity to each other,—an index of party instinct to which are now sacrificed the pugnacity and self-interest of disjointed pairs or units striving apart from company to rear their young.

The nests of *Merops viridis* are never constructed in wet earth. The holes that are drilled in the bank of a river, canal or cutting lie always above water-level. Once a nesting site has been selected, the bird starts forthwith to dig its burrow and does not appear to be guided by any consideration of the hard or soft nature of the soil, though the latter no doubt determines in a large measure the shape, viz., depth, declivity and direction of the nest-hole.

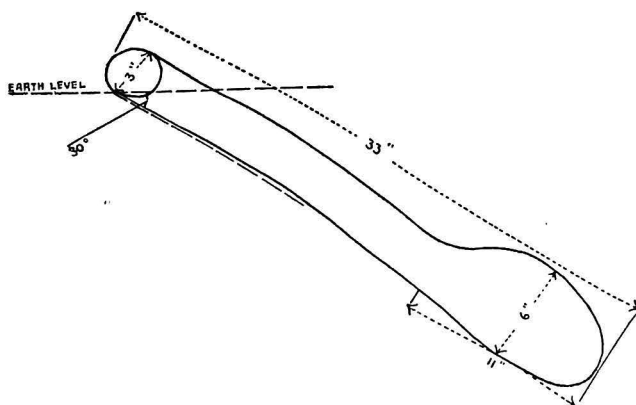
The relation between the shape of a Bee-eater's nest and the nature of the earth where its burrow is made affords



Nest of *Merops viridis*.
Site: Mound of soft sandy earth.

Fig. 2 A.

a highly interesting study, and what little observation I could make on this point is best illustrated by diagrams of some nests that I discovered during March and April, 1926, in Rām-chandrapur, a village near Sodepur Ry. Station, about 12 miles from Calcutta. Fig. 2 A shows a tunnel burrowed in a mound of soft sandy earth dug out from a brick-field and heaped on its margin. The direction of the burrow is almost on a level with the aperture or entrance for the nest. The soil being soft, the bird had to work its way evidently for a sufficient depth to ensure comparative safety, so that the total length of the burrow inclusive of the nest-chamber measures 38". It may be pointed out that the bird accomplishes its feat by first digging out the earth with its bill, and then scraping it away with its claws. In a heap of earth piled beside a ditch or excavated brick-yard, the horizontal shape of the nest, pierced and lengthened out to a depth of 38 inches almost in a straight line is the one which is better calculated to provide security and minimise time and labour than a vertical burrow or an inclined nest which runs a risk of being easily choked or covered over by the surrounding soft earth. It is easy to realise that this risk does not exist in a soil which has settled down to a sufficient degree of firmness or is very hard by reason of clay and other similar ingredients in its composition.

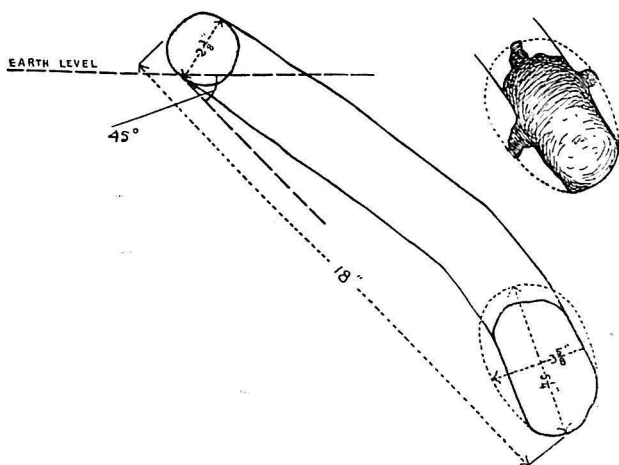


Site of nest in a more steady soil.

Fig. 2 B.

Fig. 2 B represents a nest in a similar situation (viz., a mound of excavated earth in a brick-field) but in a more steady and firm soil. The inclination of the burrow at an angle of 30° is thus rendered possible without any danger of its being buried by the surrounding earth. But the tunnel is sufficiently

long (33 inches), evidently for the purpose of ensuring comparative safety in an only partially firm ground. All the nests of *Merops viridis* in very hard soil, which I came across, were in fallow fields and pasturage, where the roots of rank weeds and elephant grass appeared to hold the earth together. Here drilling is no easy job, a factor which obviously explains why all these nests are shorter in length than those I discovered in softer and more unsteady soil. It is worthy of note that these burrows invariably had an inclined shape and direction. The reason for this appears to be that a bird in its act of drilling through hard ground gets a better grip as it were, while excavating in an inclined plane than when it has to dig its way horizontally and in a straight line. In

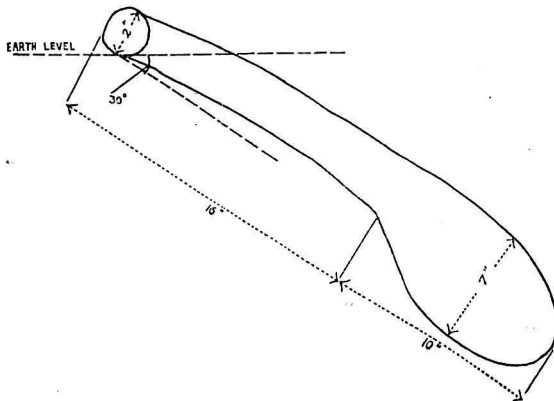


Nest of *Merops viridis* in very hard earth.
Unusual nest chamber.

Fig. 2 C.

Fig. 2 C, a sketch is given of a nest burrowed in very hard earth, its angle of inclination being 45° . Fig. 2 D is another representation of a nest in difficult ground, sloping at an angle of 30° . In both these cases, the length of the tunnel inclusive of the egg-cavity is much shorter, being 18" in C and 26" in D. It will be apparent from the illustrations that the nesting chamber in cases in which it protrudes to one side, either right or left, somewhat resembles in shape the head of a golf-club. But in type C its shape is unusual, there being no palpable extension either on the left or right side, nor is there any gradual slope towards it. The egg-cavity lies at the extremity of the tunnel, being scooped wider and deeper down from this plane, so that it can only be reached by a direct jump

from the higher level of the passage, a portion of the wall of which overhangs it like a vaulted parapet (vide Fig. 2 C illustration). Each of the nests C, D and A contained six eggs



A nest in hard, difficult ground.

Fig. 2 D.

in varying stages of incubation, while in B, I found six young with the feather-tracts in their body commencing to appear. While cutting open these and many other nest-chambers I was amazed at the behaviour almost uniformly shown by the sitting bird in the face of the disturbance set up by the digger's spade. Even when its body became exposed and earth and dust crumbled down upon it, it showed no perturbation and made no attempt to evade capture. It is noteworthy that the eggs or young of *Merops viridis*, whenever I found them in a nest in the district of 24 Parganas, were almost invariably six in number; Blanford¹ and Hume² however mention five as the highest number, and if I came upon five young in one nest there was always an unhatched egg (which was evidently infertile) lying in a corner.

3. *Terpsiphone paradisi*. The Indian Paradise Flycatcher.

There is no gainsaying the fact that while a bird's movements have usually a reference to the food conditions prevalent within any given area or district, the exigency of its nesting gives to its movements a direction, which is sometimes indicative of the bird's behaviour (while nesting) in relation to man. The Indian Paradise Flycatcher, *Terpsiphone paradisi*, a bird of fairly wide distribution may be taken as an instance in

¹ Fauna of British India, Birds, Vol. III, p. 111.

² Nests and Eggs of Indian Birds, 2nd Ed., Vol. III, p. 60.

point. Unlike *Merops viridis*, it avoids human associations for a major part of the year, and its wanderings, lacking as they are in definiteness and character, appear so uncertain as to baffle all attempts to take a correct note of them. It is only during the advent of its nesting season that we see some semblance of method in its movements. The clockwork regularity with which *Terpsiphone paradisi* appears year after year in its old nesting sites, situated though they be in the heart of a crowded village, is in marked contrast with its evasive and rambling habits and its conduct at other times in relation to man. While this species usually remains hidden from our view, the apparent suddenness of its visits which recur year after year at the stated period to the scene of its former nesting, accounts for most of the erroneous impressions in regard to the character of its movements. Thus from Munn's¹ mention in his note "On the Birds of the Calcutta District" of *Terpsiphone paradisi* as "arriving in April and remaining until the middle or end of October," the inference is irresistible that the bird is a migrant in the district. Again its visits are apt to be characterised as "seasonal," or in a great measure so,—an impression evidently based upon the recurring nature of its appearance in a given area during its nesting season. It appears to me that it is only when we take note of the fact that its movements within any district are regulated by the prevailing conditions of its food-supply that any correct reading of those movements is possible. It will then become easy to account for the presence or absence of *Terpsiphone paradisi* at any particular period in parts of its habitat. Mr. Stuart Baker² is also inclined to ascribe its roaming habit to the exigency of its food conditions. So far as my own observation goes, I have found this bird to be a permanent resident in the district of 24-Parganas, but although it shows a preference for a particular locality during the nesting season, it is generally not attached to any circumscribed haunt. It moves about locally in parts of its habitat, though a few instances came to my notice of a single pair remaining in a favoured spot throughout the year, e.g. in the heart of a village, Debandipur, off Sodepur Railway Station, about 13 miles distant from Calcutta. With the advent of its breeding time, the bird's movements appear to have a pointed reference to the suburban seats of men, where, in the adjacent orchards and fruit gardens within the district, numbers of *Terpsiphone paradisi* make their appearance and readily attract our notice. The Mango, *Lichi*, Jack and Bamboo branches appeal more than others to its instinct of site-selection while nesting, and in a suitable fork amongst them is inserted its nest,—a specimen of unique

¹ Ibis 1894, p. 47.

² Fauna of British India, Birds, 2nd Ed., Vol. II, p. 267.

architecture, whose special feature is its outward embroidery with the aid of cocoons, lichen and spiders' egg-bags.

It is remarkable that, notwithstanding its striking personality and commonness at this season, very little observation appears to have been made of its nesting habits. So far as the district of 24-Parganas is concerned, Munn's is the only record¹ available of the nidification of this bird. He writes—"they do not usually lay before June," and speaks of a nest found by him on June 8, 1890, to contain young. The female bird, he observes, "apparently does all the work (of nesting), for the cock bird at this time is extremely shy and generally remains quietly perched in a tree near the nest and watches the operation and keeps the hen bird to her work." Oates² records May to July as its time for nesting, whilst Mr. Stuart Baker³ mentions May and June as the breeding periods of this bird in Northern India. I have, however, found that *Terpsiphone paradisi* sets about building its nest as early as April, so that by the last week of this month the nest is not only complete but the eggs are laid. Throughout May, June, July and even in the second week of August, I have observed its nests, eggs or young. I have in many instances observed the cock bird in the act of sitting on the eggs within the nest, so that Munn's observation on this point appears to be based upon inaccurate foundation. Mr. Stuart Baker⁴ bears me out, for he records—"the cock bird, which shares in the duties of incubation, is a conspicuous object when sitting."

¹ Birds of the Calcutta District.. Ibis 1894, pp. 47-48.

² Fauna of British India, Birds, Vol. II, p. 46.

³ Fauna of British India, Birds, 2nd Ed., Vol. II, p. 266.

⁴ *Ibid.*, p. 266.



