

THE SITE OF ALEXANDER'S PASSAGE OF THE HYDASPES AND THE BATTLE WITH POROS

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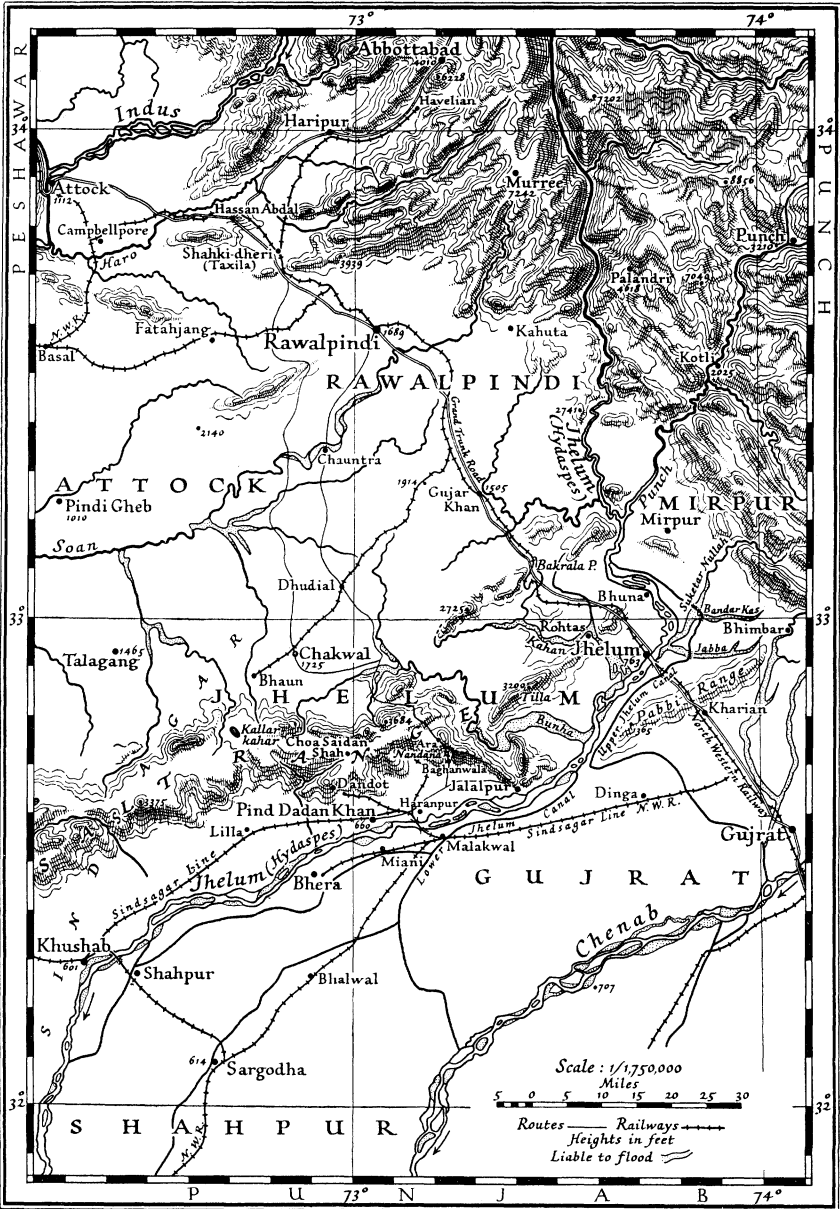
THE question of the ground where Alexander secured his bold passage of the Hydaspes and fought his great battle with Poros has been long discussed, but no definite solution has been reached and opinions have remained divided. This has been the result of conflicting locations having been proposed by those officers who in days long past had occasion to visit one portion or another of the ground where routes from the Indus crossing the Salt Range lead down to the Jhelum. Scholars working far away from India in their study could scarcely do more than try and weigh those opinions in the light of the interpretations they were led to put upon the records of Alexander's classical historians. Neither those early visitors to the ground since the days when Sir Mountstuart Elphinstone's famous Mission passed the Jhelum in 1809, nor the scholars discussing the proposed locations, had enjoyed the advantage of such accurate topographical and antiquarian information as the excellent maps produced in recent times by the Survey of India, and the records embodied by British administrators in District Gazetteers have placed at the disposal of the critical student.

Judging from what prolonged experience elsewhere had taught me, I felt convinced that even with the help thus afforded careful examination on the ground would be needed if a definite conclusion was to be arrived at. The opportunity for such an investigation had been desired by me for many years. But necessary freedom for it offered only last autumn while I was awaiting a start on the archaeological explorations in Southern Persia which the generous support accorded by Harvard University and the British Museum has now placed within reach for me.

There can be no doubt about the interest which for the historical student and even a wider public in the West attaches to this question of ancient topography. The scene of what was probably the most hazardous among the many amazing exploits of the great Macedonian's campaigns could claim more than romantic glamour if correctly located. For as a great strategist and student of history (Hellmuth von Moltke) has justly observed: "The locality is the surviving portion of reality of an event that has long ago passed by. . . . It often restores to clearness the picture which history has preserved in half-effaced outlines."

And certainly Alexander's passage of the Jhelum or Hydaspes when swollen in flood, and his subsequent decisive victory on the other bank over the vastly superior Indian army which opposed him, represent an event of lasting historical importance. It is true Alexander's victorious advance into the Punjab did not result in permanent conquest. But it was the first among the numerous successful invasions of India from the north-west frontier which history records, and by reason of the cultural influences for which it opened the door it marks an epoch in the past of India.

There is no need to discuss here the successive stages in that extraordinary campaign which had brought the Macedonian army across the Indus and



Country between the Indus, Jhelum, and Chenab: Rawalpindi Division

ultimately carried it victoriously to the bank of the Hyphasis or Beas where Alexander was obliged to give way before the war-weariness of the hard-trying troops and to acquiesce in the return westwards. Nor can I find room to set forth all the details presented by the extant records as regards the outstanding event which concerns us here. It must suffice to examine those briefly which may help to locate its scene. They are mainly to be gathered from Arrian. His account, derived to a great extent from contemporary sources, is the fullest and on the whole the most reliable.

Alexander, after his passage of the Indus, had been hospitably received at Taxila, whose ruler had before tendered his submission. There he learned of the opposition which Poros, the king of the region beyond the Hydaspes, the present Bihat or Jhelum, was preparing to offer to his advance into the Punjab. The mention of Taxila as the place whence Alexander's move to meet Poros was begun supplies us with an absolutely safe starting-point for his route.

The position of Taxila, the Takshasila of early Indian texts, was long ago correctly identified by General Alexander Cunningham with the ruined site of Shahki-dheri, between Hassan Abdal and Rawalpindi. Epigraphic finds and Sir John Marshall's brilliantly successful excavations have since placed this location beyond all doubt. The march thence to the Hydaspes must have taken Alexander across the Salt Range and the much broken tableland to the west of it. In many places the ground here offers difficulties to the progress of a large force. But there is no record of armed resistance having been met with until "Alexander encamped on the banks of the river and Poros was seen on the opposite side, with all his army and his array of elephants around him," as Arrian tells us.*

Alexander "clearly saw that it was impossible for him to cross where Poros himself encamped near the bank of the Hydaspes." Other points affording chances of a passage were also being carefully watched by detachments of the enemy. So he resorted to a series of demonstrations in different directions along the river bank to divert and wear out the Indian enemy's attention while he was trying to find a place where it would be possible for him unobserved to steal his passage across the river. It was the early summer when the waters of the river, swollen by the rains and the melting snows of the mountains, rendered fording impossible.

About the place which Alexander finally chose for the intended crossing, we are told by Arrian: "There was a headland (*ἄκρα*) ascending from the bank of the Hydaspes at a point where the river made a remarkable bend, and this was thickly covered with all kinds of trees. Over against it lay an island covered with jungle, an untrodden and solitary place. Perceiving that this island directly faced the headland, and that both places were wooded and adapted to screen his attempt to cross the river, he decided to take his army over this way. Now the headland and the island were 150 stadia distant from the great camp." Curtius's description of the place which Alexander selected for crossing states of the island that it was larger than the rest of the numerous islands in the river, and adds an important detail: "A deep ravine (*fossa praealta*) moreover, which

*McCrindle's translation in his 'Invasion of India by Alexander the Great,' 1897, is followed in the quotations from Arrian and Curtius, with needful modifications as suggested by the original text.

lay not far from the bank in his own occupation, was capable of hiding not only foot soldiers but also men with horses."

Arrian records at some length the dispositions made by Alexander to deceive the Indians as to his planned crossing. A portion of his forces under Krateros was left in the camp with orders to cross to the opposite bank as soon as Poros was seen to have withdrawn from it his formidable array of elephants; for these would have made it impossible for the horses unaccustomed to their sight to land. Another portion was posted between the island and the main camp and ordered to cross in detachments as soon as the Indian army were seen fairly engaged in battle. Alexander himself with selected troops of horse and foot "marched with secrecy, keeping at a considerable distance from the bank that he might not be seen to be moving towards the island and the headland from which he intended to cross over to the other side."

There skin rafts were carefully got ready during the night. There, too, most of the boats previously brought across from the Indus in sections had been conveyed and secretly pieced together. During the night a heavy storm came on, drowning the noise of the preparations with its thunder and rain. Towards daybreak the rain stopped and the troops moved across on rafts and boats in the direction of the island. "They were not seen by the sentries posted by Poros till they had passed beyond the island, and were not far from the bank." Alexander himself embarked on a thirty-oared galley with his bodyguards and other selected men. "As soon as the soldiers had passed beyond the island they steered for the bank, being now in full view of the enemy."

While the sentinels posted by Poros galloped off to carry the tidings, Alexander disembarked, himself the first, and at the head of the landed cavalry moved forward. "Owing however to ignorance of the locality he had unawares landed not on the mainland, but upon an island and that a great one . . . separated from the mainland by a branch of the river in which the water was shallow; but the violent storm of rain which had lasted the most of the night had so swollen the stream that the horsemen could not find the ford. When at last the ford was found, he led his men through it with difficulty."

There is no need for us to follow the details recorded by Arrian, mainly from the reliable account of Ptolemy, Alexander's general and the future king of Egypt, as to the events that followed the successful crossing. A brief summary of them including such points as may have a topographical bearing will suffice for our purpose. Alexander, leading forward his cavalry, some 5000 men, had no difficulty in routing the inferior force of horsemen and chariots which had been first sent ahead by Poros under his own son. The chariots proved useless in the action, having stuck in the clay, and were all captured. On learning of this rout and of the attack being launched by Alexander himself with the strongest division of his army, Poros decided to leave only a small force in camp to watch the troops of Krateros and to march against Alexander with all the rest of his army. He is said to have taken "all his cavalry, 4000 strong, all his chariots, 300 in number, 200 of his elephants, and 30,000 efficient infantry."

As regards the order of battle in which Poros drew up his army, we are given information which, as we shall see, affords a useful topographical indication. He "posted his elephants in the front line at intervals of at least a plethron

(101 feet)." Behind them he drew up his infantry in a second line. "He had also troops of infantry posted on the wings beyond the elephants, and on both sides of the infantry the cavalry had been drawn up, and in front of it the chariots." There is nothing stated that could suggest that this very extensive line of battle rested its flanks on any protective physical feature such as the river bank or higher ground might have afforded. It is important to note this point as it has its bearing on the tactical development of the battle and the light this throws on the topography of the ground where it was fought.

Alexander being superior in cavalry, opened the battle by attacking the cavalry on the enemy's left wing with the greater part of his horse. "The Indians meanwhile had collected their horsemen from every quarter and were riding forward to repulse Alexander's onset." Thereupon two regiments of cavalry under Koinos, whom Alexander had detached to his right, in accordance with his previous orders, appeared in their rear. The Indian cavalry thus forced to face both to front and rear was thrown into confusion, and completely broke when Alexander, instantly using his opportunity, fell upon it. Obviously the outflanking attack of Koinos was made possible only by the Indian left wing being at a distance from the river.

This initial success, gained as on other occasions by the trained skill of the Macedonian cavalry and the genius of its leader, decided the issue of the day. The elephants, to which the Indian horsemen had fled for shelter, on moving forward were met by the Macedonian phalanx which had come up. The latter, though unaccustomed to face elephants and suffering serious losses from their onslaughts, held fast. Alexander's cavalry, being free to operate from all sides, made great carnage wherever they fell upon the enemy's ranks, though the Indians fought very bravely. "The elephants being now cooped up within a narrow space, did no less damage to their friends than to their foes."

Finally surrounded by Alexander's cavalry and pressed by the Macedonian infantry advancing in phalanx the whole Indian host was cut to pieces or fled "wherever a gap could be found in the cordon of Alexander's cavalry." On seeing that victory was being gained by their king, the troops left behind on the right bank of the river crossed and took up the pursuit, doing great execution among those who had escaped from the slaughter.

Finally Poros, who had valiantly fought through the battle, was forced to surrender. After recording Alexander's generous treatment of the vanquished king, Arrian tells us: "Alexander founded two cities, one on the battlefield, and the other at the point whence he had started to cross the river Hydaspes. The former he called Nikaia, in honour of his victory over the Indians, and the other Boukephala, in memory of his horse Boukephalos, which died there," as Arrian states, from age and exhaustion.

From the account of this hard-contested battle, the first recorded in history among the many by which invaders from the north-west successfully fought their way into the plains of India, we may now turn to the question which concerns us here. It is that of the ground which was the scene of this the greatest perhaps of Alexander's military achievements. I shall now proceed, in a succinct way such as befits this place and the time at present at my disposal, to indicate the new observations, partly topographical, partly archaeological, which I believe will help to settle the question. Before this however I must

briefly state the two contending opinions which have prominently figured in the discussions devoted to it.

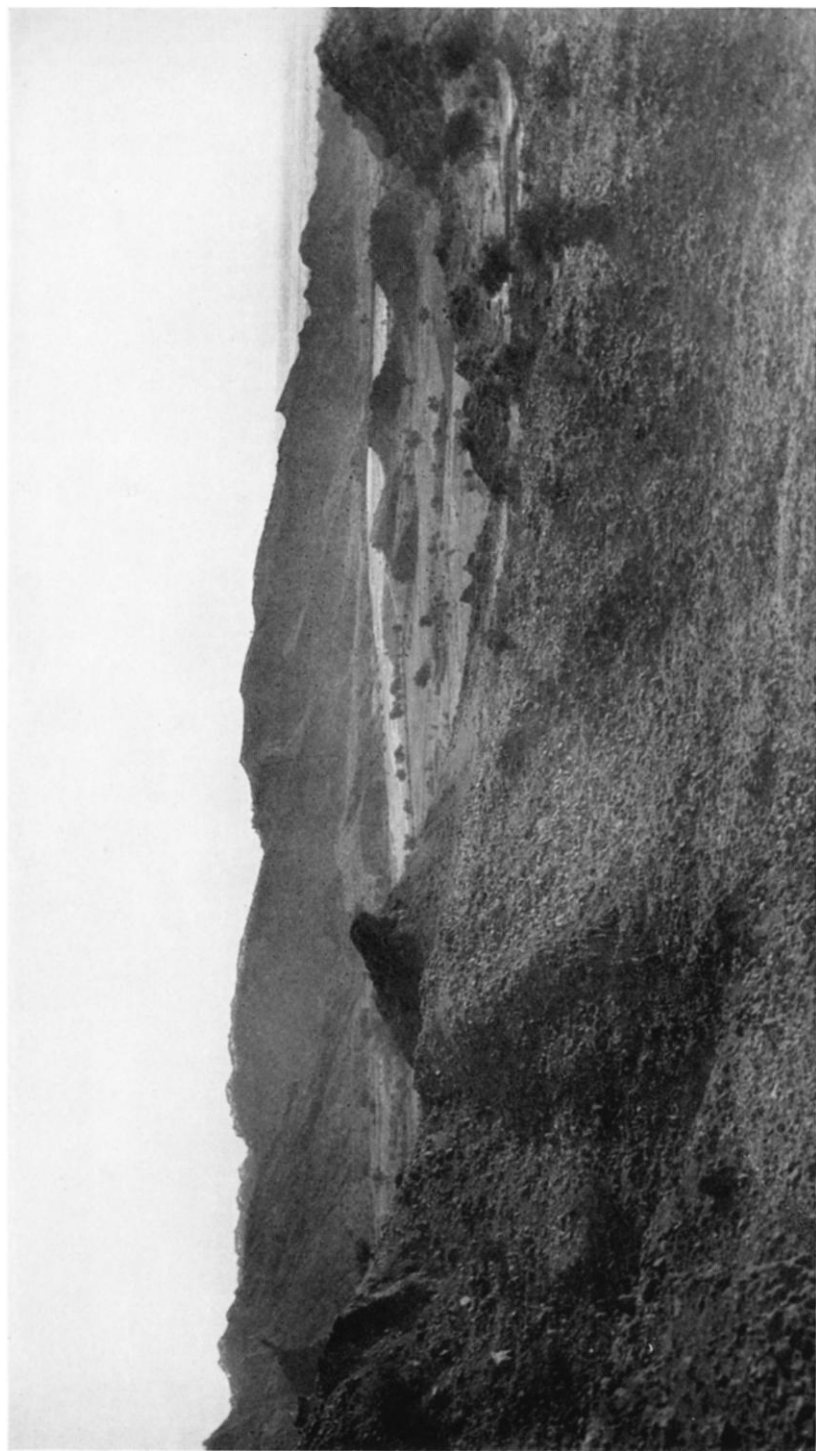
Both have had distinguished scholars among their champions. One, first propounded by Sir Alexander Burnes and M. Court, one of Ranjit Singh's French generals, would make Alexander reach the Jhelum at the town from which the Hydaspes, the ancient Vitasta of the Rigveda, derives its modern name. He is supposed to have marched there from Taxila across the Salt Range by the route which the present Grand Trunk Road follows. This view had been advocated at some length by General Abbott, the founder of Abbottabad, as long ago as 1852. It had been overshadowed for many years by the rival theory of General Cunningham, to be mentioned presently, but was revived with many a learned argument and widely propagated through the late Mr. Vincent Smith's very meritorious 'Early History of India,' and other publications based on it.

In a lengthy appendix specially dealing with the question Mr. Vincent Smith placed Alexander's crossing at Bhuna, some 10 miles above Jhelum town (see general map). There the river, after leaving the foothills, makes a bend though not a marked one. But, as any large-scale map would show, there is no "headland ascending from the bank of the river" to be found there, nor any deep ravine such as Curtius specially mentions. In accordance with this location Mr. Vincent Smith was prepared to look for the battlefield on the comparatively narrow stretch of riverine flat which to the east of the river intervenes between its left bank and the much broken ground at the foot of the Pabbi range of hills.

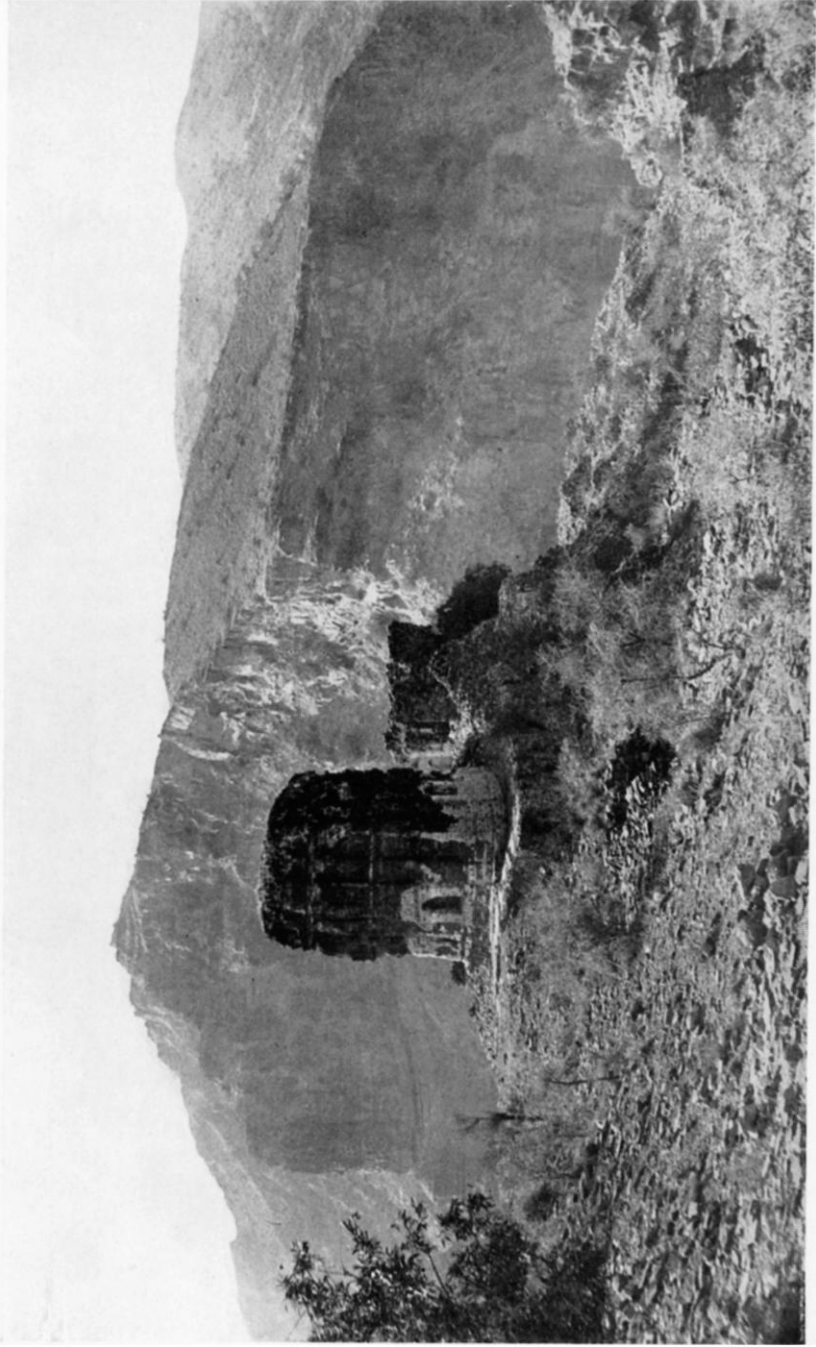
Before Mr. Vincent Smith took up the question at Oxford, with quasi-legal acumen but without close study of the ground, the theory put forth by General Alexander Cunningham in his 'Archaeological Survey Report for 1863' held the field. He placed Alexander's camp at Jalalpur, a small town on the right bank of the river about 30 miles below Jhelum. There one of the several routes leading across the Salt Range south-west of the Grand Trunk Road debouches, and there, as the general map shows, the river leaves the foot of a rugged projecting spur of the Salt Range which it washes for a distance of about 8 miles higher up before finally emerging into the open alluvial plain.

General Cunningham sought the place selected by Alexander for the crossing at the village of Dilawar at the upper end of the river's course along the foot of the spur just mentioned. But the distance between Dilawar and Jalalpur is only 8 miles and hence would not agree with the 150 stadia, or $17\frac{1}{2}$ miles, which Arrian definitely mentions as the distance between Alexander's camp and the place of his crossing. In order to meet this difficulty about his assumed locations General Cunningham felt obliged to make Alexander's troops perform a night march by a very devious route. This he supposed to have taken them from Jalalpur up a narrow winding ravine that debouches there (see Plate 1), and then across its head by a difficult track into another winding ravine and thus finally down to Dilawar (see detail map). On this route the desired distance of some 17 miles would indeed be arrived at. But how a large force could be taken over this distance, across such difficult ground, in the course of a single stormy night, remained unexplained.

The Nestor of Indian archaeology had taken pains to study the ground and



1. Mouth of Kandar Kas torrent bed, seen from hill slope to north-west



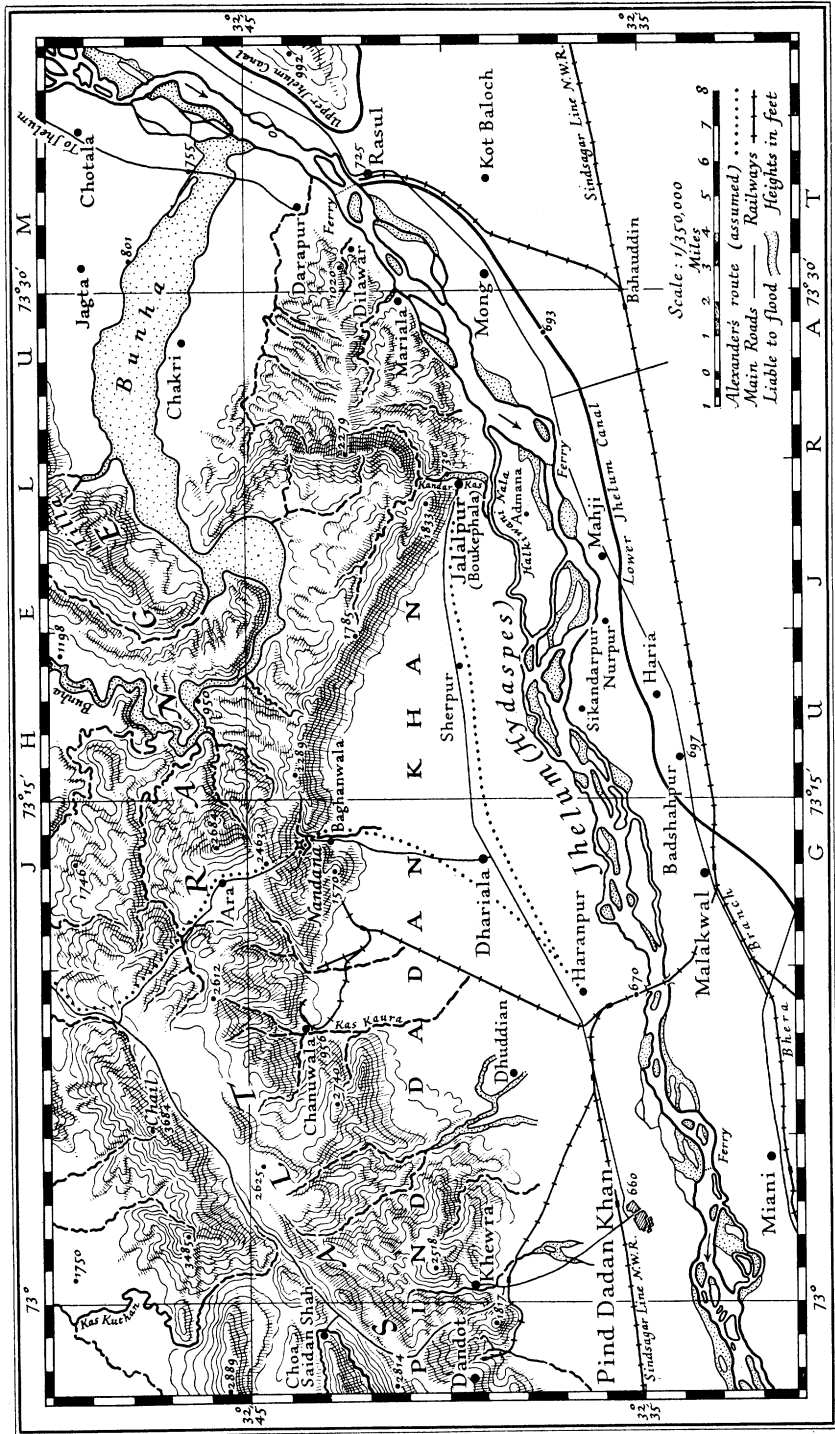
2. Ruined Hindu temple on ridge of Nandana, from north-west

had endeavoured to strengthen his theory by arguments drawn from such scanty topographical data as classical authors apart from Arrian and Curtius afford regarding Alexander's operations. Thus he rightly pointed out that the southerly direction indicated by Strabo for Alexander's march from Taxila as far as the Hydaspes distinctly points to a route having been followed that lay to the west of one leading to Jhelum town, like the present Grand Trunk Road. He also recognized that the distance of 120 Roman miles from Taxila to the Hydaspes, as recorded by Pliny from the measurement of Alexander's surveyors, is considerably greater than that measured to Jhelum, whether by the line of the Grand Trunk Road or by that of its predecessor which led there past the fortress of Rohtas. He rightly saw that this distance points to a route striking the Jhelum river lower down.

But the serious difficulty already hinted at about General Cunningham's locations remained, and some of the minor arguments adduced by him in support of them could not hold good against a critical examination such as Mr. Vincent Smith felt obliged to apply to them. It was certain that both the rival theories involved serious difficulties. What alone could offer a chance of clearing the question was a careful scrutiny on the spot of the recorded historical data in the light of topographical facts and of whatever definite antiquarian indications might be found there.

The search made by me with this object started towards the close of November in the vicinity of the town of Jhelum. Close examination of the ground to the east of the river conclusively proved that the battle with Poros could not possibly have been fought there as assumed by Abbott and Vincent Smith. Within 3 miles above the area opposite to the town, where according to their assumption the camp of the Indian army must have stood, there begins a series of marshy flood beds, which stretch right across the narrow riverine belt and with short interruptions extend for over 4 miles up the river. These beds of the Jabba, Bandar Kas, and Suketar Nullahs receive the drainage of numerous torrents descending from the Pabbi, Bhimbar, and Mirpur hills. They are from $\frac{1}{2}$ to over $1\frac{1}{2}$ miles in width where they pass across the riverine flat before joining the Jhelum. Quicksands remain in them even after the rains of the "hot weather" months have passed. During those months they are quite impassable whether on foot or horseback. A crossing can then be made only by keeping to the much broken ground at the foot of the hills to the east and by thus making great detours. The difficulties of this ground are well illustrated by the numerous and elaborately constructed bridgings and barrages over which the Upper Jhelum Canal taking off higher up the river had to be carried here.

It would have been an impossible proposition to take the large army of Poros with its chariots and elephants over such ground in the season of rains. It has proved equally certain in view of topographical facts clearly shown by the Survey of India's $\frac{1}{4}$ -inch and larger scale maps that the limited width of the flat ground to be found beyond the marshy bed of the Suketar Nullah could nowhere suffice for a battle array such as Arrian records of the Indian army. This ground between the river bank and the broken foot of the hills is nowhere more than $3\frac{1}{2}$ miles across and farther up steadily narrows. Taking Arrian's detailed figures the front line of infantry alone, protected by 200 elephants at a distance of a plethron, or 101 English feet, from each other, would have



Eastern End of the Salt Range: Route of Alexander

stretched over close on 4 miles. The chariots and the 2000 Indian cavalry drawn up at each of the wings must have extended the line greatly. And in addition to this there would have to be allowed sufficient room for the out-flanking movement executed by Koinos's cavalry.

In view of such plain topographical facts there is no need to discuss at length other grave objections to the theory learnedly set forth by Mr. Vincent Smith. Such is the absence at Bhuna of anything in the shape of a "headland ascending from the bank of the river" or the fact that the distance from Jhelum to Bhuna is only about 10 miles instead of the $17\frac{1}{2}$ miles mentioned by Arrian between Alexander's camp and the headland. But a brief reference may be made to the improbability of the leader of an army relying largely on the use of elephants and chariots having chosen the narrow stretch of tolerably flat ground between the river's left bank and the broken hills and ravines of the Pabbi range at his back as the place where to meet a formidable invader.

The route leading from Taxila to Jhelum is the shortest in the direction of such old centres in the plains as Lahore and Sialkot, and its use is attested from mediaeval times onwards. But before the Grand Trunk Road was constructed it was by no means the easiest route. Of this I had occasion to convince myself on an interesting excursion I made from Jhelum along the old line of the route. This passes the great fortress of Rohtas, which the Emperor Sher Shah constructed in A.D. 1542-3 to guard the narrow exit from the Salt Range into the riverine plain, and thence ascends towards the Bakrala pass.

To the south of Rohtas a steep portion of the eastern branch of the Salt Range culminating in the sacred hill of Tilla bars convenient access to the Jhelum for about 20 miles. There is no regular route leading across it, and for the same distance the near approach of the Pabbi hills to the left bank of the river and the broken nature of the ground at their foot preclude the idea that the place of Alexander's crossing and the field of battle with Poros could possibly be looked for there.

It is quite different with that portion of the Salt Range which beyond the Tilla hills continues for a considerable distance westwards. There it is crossed by a succession of routes which an invader coming from the north-west could conveniently use to reach the Jhelum and the open plain beyond the river. Apart from the route descending to Jalalpur, the only one to which Cunningham and his critic make any reference, there are at least four routes practicable for laden animals, including camels, to be found in regular local use between the wide bed in which the Bunha river, usually dry, makes its way to the Jhelum above Darapur (near Dilawar), and the route descending past the coal mines of Dandot.

The last-named route was undoubtedly used by the Emperor Babur when coming from the Peshawar side in November 1519. He then made his first successful inroad into the Punjab across the Salt Range, moving past the lake of Kallar-kahar upon the town of Old Bhera on the right bank of the Jhelum. It is not necessary to concern ourselves with each of the other routes I have just referred to, though I have taken occasion to visit them in parts. For fortunately there is one among them to which historical notices of an invasion far older than that of Babur's were bound to attract my special attention from the start.

Muhammadan chronicles repeatedly mention the fort of Nandana and the

pass in the Salt Range guarded by it in connection with the campaigns of Mahmud of Ghazna, that early invader of India, and also with later events down to the thirteenth century. The merit of having first correctly located this place, examined its surviving remains and recognized the importance of the route passing it belongs to my friend Mr. W. S. Talbot, C.S.I., late of the Indian Civil Service. While in charge of the Jhelum District and in the course of the Settlement conducted by him there, he took a special interest in its antiquities and historical past. He found the name Nandana still attaching at the present time to a remarkable hill stronghold (see Plates 2 and 3) which completely closes a route leading down steeply from a plateau of the outer Salt Range to the village of Baghanwala and the open riverine plain beyond it.

Before I discuss the historical interest attaching to Nandana and the bearing of its position upon the question of Alexander's route to the Hydaspes and of his subsequent passage of the river, I may conveniently quote the brief but very apt description of the position from Mr. Talbot's 'Gazetteer of the Jhelum District' (p. 46): "About fourteen miles due east of Choa Saidan Shah, between the villages of Baghanwala and Ara above, the outer Salt Range makes a remarkable dip; the road over the hills winds up the face of a steep rocky hill, with perpendicular precipices at the sides; so that in former days the holder of this hill had the absolute command of what is one of the most obvious routes across the range."

Nandana is repeatedly referred to in the accounts of the successive invasions of the great conqueror Mahmud of Ghazna. The events in connection with which it is mentioned leave no doubt about its position and about its having been an important stronghold of the last rulers of the Hindu Shahiya dynasty after it had been forced to retreat to the extreme north-west of the Punjab from its former possessions to the west of the Indus. Here it will suffice to refer only to those mentions of Nandana which at present can be checked in critically made versions from contemporary sources as presented in Dr. Muhammad Nazim's 'Mahmud of Ghazna' (1931). Thus we are told of Sultan Mahmud having in the spring of A.D. 1014 "marched to Nandana which, situated on the northern spur of the Salt Range, commanded the main route into the Ganges Doab" (p. 91).

A subsequent account records in some detail the defence offered at Nandana by the Hindu king's son in the "strong position between two hills at the junction of which the fort was situated." It tells us how after prolonged fighting beyond the upper entrance of the pass the defenders were driven back into the fort, which was then besieged and ultimately taken by the Sultan. The importance attaching to the route thus opened is attested by the special mention made of the Muhammadan commander to whom Mahmud entrusted Nandana when he returned to Ghazna after having pursued the fugitive Hindu king into the mountains south of Kashmir (p. 93). An earlier notice relating to A.D. 991 gives Nandana as the name of a whole district adjacent to Jhelum, and thus helps to bring out the importance of the place and the route past it.

I shall further on briefly mention the interesting archaeological observations which our survey of the Nandana fort and its ancient remains yielded. But here I may turn at once to the very useful indications which this oldest of historically attested routes across the outer Salt Range affords as regards the

location of Alexander's camp on the Hydaspes and the place of his crossing the river. A look at the map will show that the road descending the pass of Nandana to the pleasant village of Baghanwala will, if continued south past its abundant orchards and across the gently sloping alluvial plain below them, bring us to the bank of the river close to the large village of Haranpur. Now, at a distance of about 17 miles measured from there along the main road towards Jhelum, we come to the small town of Jalalpur, occupying a position that corresponds in a very striking fashion to Arrian's and Curtius's description of Alexander's crossing-place.

The town of some three thousand inhabitants is built on rising ground at the foot of a small outlier of the range which close behind it rises to a triangulated height of 1833 feet, or a little over 1000 feet above the river-bed. Immediately to the east of it there lies the wide winding mouth of the Kandar Kas (see Plate 5), a torrent bed with sandy bottom descending from the range and joining the river. Within less than a mile there passes a northern branch of the Jhelum, carrying much water at the time of the summer floods and known as the Halkiwani Nala. Jalalpur marks the south-western corner of that projecting spur of the Salt Range which, as already mentioned above, is washed at its foot by the river for a distance of about 8 miles between Dilawar and Jalalpur. Nowhere else along its course after debouching from the mountains does the Jhelum touch ground which could possibly be described as a headland or promontory (*ἄκρα*).

The spur all along falls off very steeply to the river and is broken by many narrow ravines. Only at the mouths of the latter is there room for scanty fields cultivated by three small hamlets. The road to Jhelum town, which used to run along the very foot of the spur and is still marked in Survey maps down to 1921, has been so badly broken in places by recent floods that it had to be re-aligned with no small trouble across the difficult ridges and ravines farther up. It can be safely asserted from the appearance of the cliffs above the river that the course of the latter must in historical times have always set against the foot of the spur.

The consequent difficulty of maintaining communication along it deserves to be specially noted, for it precludes the idea that demonstrations by large numbers of troops, such as Arrian and Curtius relate to have been made from Alexander's camp, could have taken place here. Yet Cunningham's location of this camp at Jalalpur would presume this. In the same way it would have been impossible to find room here for the force under Meleager, which we are told was posted by Alexander halfway between his camp and his selected crossing-place, if these had really been at Jalalpur and Dilawar, respectively, as assumed by Cunningham.

At Jalalpur, on the other hand, all physical features are in closest agreement with the facts recorded about Alexander's place of crossing.* There is the

*See above, pp. 33 sq. This close agreement of the physical features had been correctly noted already by Sir Mountstuart Elphinstone, who reached Jalalpur in July 1809 on returning from Peshawar across the Salt Range. Referring to its hills he says: "They came to the edge of the river, which, being also divided by islands, presents exactly the appearance one expects from the accounts of the ancients. So precisely does Quintus Curtius's description of Poros's battle correspond with the part of the Hydaspes where

headland overlooking the river at a marked bend; there are still plenty of such trees and bushes as the arid climatic conditions of the present day permit of, growing on the slopes east of Jalalpur; there is the ravine of the Kandar Kas between Jalalpur town and the point where the spur turns off sharply from the river; and what deserves to be specially noted, there is a large island stretching down from opposite Jalalpur between the Halkiwani and the present main bed farther south.

The winding bed of the Kandar Kas is overlooked here on either side by bold hillocks rising up to 300 feet (see Plate 5). At its nearest bends there adjoin stretches of fairly level ground now under cultivation. Thus the bed corresponds exactly to the *praealta fossa* or deep ravine which Curtius mentions as lying not far from the river bank and "capable of hiding not only foot soldiers but also men with horses." There are large groves of trees and tamarisk bushes growing on the ground which separates the town from the river-bed and which would thus admirably serve to screen preparations for an intended crossing.

The Halkiwani bed was partially dry where we crossed it on November 26 close to the mouth of the Kandar Kas, and about 55 yards wide. But from the middle of April until August it carries a large volume of water and is then quite unfordable. For the last three years great floods had come down from Kashmir and the current had set increasingly towards Jalalpur. On the opposite bank we found the ground of the island uncultivated for over 500 yards and large trunks of timber left on it by the flood. The island is occupied by the hamlet of Admana and some scattered homesteads belonging to it. Its length is now approximately $4\frac{3}{4}$ miles and was slightly greater when the last survey was made, the 1-mile-to-the-inch map of 1911 showing it as $5\frac{1}{4}$ miles. Its maximum width is now about $1\frac{1}{2}$ miles. High tamarisk bushes cover a good deal of the ground left uncultivated, while a thick wood has grown up in a "Reserved Forest" area. About half of the island is included within the boundary of the Gujrat District to the south, which suggests that at a time not very distant the main bed of the river lay farther north.

But however this may be it is certain that the island as it exists now is by far the largest of any which survey maps show on the Jhelum within the whole length of its course that can come into consideration here. This point has also its interest. Though islands in a river like the Jhelum are liable to changes, yet the course of the river and the general character of its bed are not likely to have changed here greatly during the last two thousand years; for they are largely determined by such permanent geographical features as the Jalalpur hill spur and the high ground at the end of the Pabbi range facing it. And Curtius (VIII, 13) tells us of an "island larger than the rest, wooded and suitable for concealing an ambuscade."

If then we assume that in Alexander's time there lay close below Jalalpur an island much of the same type as the present island of Admana, it is easy to

we crossed that several gentlemen of the mission, who read the passage on the spot, were persuaded that it referred to the very place before their eyes." (Cf. Elphinstone, 'An Account of the Kingdom of Caubul and its Dependencies, in Persia, Tartary, and India,' revised edition, 1842, i, p. 108). Not in vain has it been said of that great administrator and student of geography that "he could look through the mountains."

follow the successive phases of the crossing as recorded by Arrian. Moving down the channel approximately corresponding to the present Halkiwani, the boats and rafts would carry Alexander's troops to the junction of that bed with another more southerly river branch. Then on being rowed across the united channel his rafts would let them land on what might well appear to them as the mainland on the river's left bank. In reality it proved another island "separated from the mainland by a branch of the river in which the water was shallow." Arrian's account brings vividly before us the most critical phase of the whole boldly conceived enterprise and how it was met by Alexander's unflinching determination and the wonderful pluck of his hard-trying Macedonians.

Our own experience helped curiously enough to illustrate this episode. We crossed the sandy main bed of the river from the point where the Halkiwani joins it and found it nearly a mile wide. But apart from large pools it held water only in one shallow channel about 250 yards across at the time. Then we passed for close on a mile over ground which had all the appearance of mainland, being in part treated as a "Reserved Forest" area, before we came unexpectedly upon a small channel with flowing water, only 50 yards across. Shallow at the time, it was said to be quite unfordable during the time of the summer floods. It had obviously formed since the last survey was made in this area some twenty years ago. Beyond it the fertile tract, now irrigated by the Lower Jhelum Canal, was entered near the village of Nurpur.

It is on this absolutely open and flat ground stretching south of the left bank of the river that we must assume the battle with Poros to have been fought. But it is quite impossible to determine the exact position of the battlefield. We have no definite indication as to the distance from the place of landing at which the main force of Poros was encountered, though Plutarch in his 'Life of Alexander' (Chap. lx) mentions that Alexander had ridden some 20 stadia ahead by the time he fell in with the small Indian force of horsemen and chariots first sent against him. Two points however must be noted. One is the perfect openness of this ground which allowed ample room for the extensive line in which Poros marshalled his army. The other is that room was left between its left wing and the river for Koinos's outflanking movement.

Now with regard to the latter point it is of interest to observe that the present river-bed beyond Nurpur makes a considerable bend to the north-west, the triangular stretch of ground having its apex near the small village of Sikandarpur. If this bend existed already in antiquity it would make it easy to understand why Poros did not rest his left flank on the river. For if his army started from a place somewhere opposite Haranpur where Alexander's camp may approximately be located, *i.e.* from some point near the present towns of Malakwal and Miani, the direct line for an advance to meet the landed Macedonians would, as the map shows, have kept the Indian army away from the river anywhere near that bend.

Since we cannot exactly locate the battlefield it is also impossible to indicate the site of Nikaia, the town which Alexander is said to have founded there to commemorate his victory. Along the river's left bank, below the point where it may be assumed to have been reached by Alexander crossing from Jalalpur, there are to be found now the large villages of Majhi, Haria, and Badshahpur. They are all built on mounds rising well above the alluvial plain and marking

prolonged occupation. But I found no definite indication which would justify even a tentative identification of any of them with the site of Nikaia.

As regards Boukephala, the town founded by Alexander on the right bank, we are in a better position. Since Strabo distinctly places it at the point where Alexander embarked for his passage, and Arrian's reference (see above, p. 35) is compatible with the same interpretation, we may safely locate it at Jalalpur.* In support of this it deserves to be noted that coins found at Jalalpur include issues of the Greek kings who ruled in parts of Afghanistan and the north-west of the Punjab. As already recorded by General Cunningham, the numismatic evidence afforded by these coins and the still more frequent ones dating from Indo-Scythian rule clearly proves occupation of the site during the centuries immediately before and after the Christian era.

There still remains to give a brief description of the route leading down from the Salt Range through the pass of Nandana and of the remains of the ancient stronghold, a true *chiusa*, which guarded it. This route starting from Ara may in view of the explanations given above well claim our interest as the main one that saw Alexander's columns descend to the bank of the Hydaspes. There the outer or southern one of the two more or less parallel chains of hills into which the highest portion of the Salt Range here as elsewhere is divided, dips down steeply towards the riverine plain.

Between the two chains there extends a series of small open valleys fertile at their flat bottoms and situated at elevations between approximately 2000 and 3000 feet. Approach to them is easily gained by roads which traverse the broken, but all the same for the most part cultivated, plateaus stretching to the west of the Grand Trunk Road and the railway line between Taxila and the town of Jhelum. Five or six marches of ordinary length would suffice to cover the distance, approximately 80 miles in a straight line, but of course longer by road, between Taxila and Ara. Which of the several practicable routes between the two places Alexander's forces are likely to have followed, past Chakwal or Rawalpindi, Chauntra and Dhudial, and other places of larger size, we shall never know, since no definite indications are recorded.

Near the village of Ara an almost level plain, over 2 miles across and well provided with water, would have offered a very convenient camping-place for a force before starting on the descent to the river. It is here that we must assume, more than thirteen centuries after Alexander's passage, to have taken place that battle between Mahmud of Ghazna and the Hindu ruler which the Muhammadan chroniclers mention as having preceded the former's siege of the fortress of Nandana in A.D. 1014. From the elevated rim of the Ara plateau, at a height of about 2400 feet, a steep winding road leads down over the rocky scarp of the range for close on 2 miles to where a narrow depression at an average level of 1300 feet extends between two small valleys uniting farther south below the ruined stronghold of Nandana (see Plate 2).

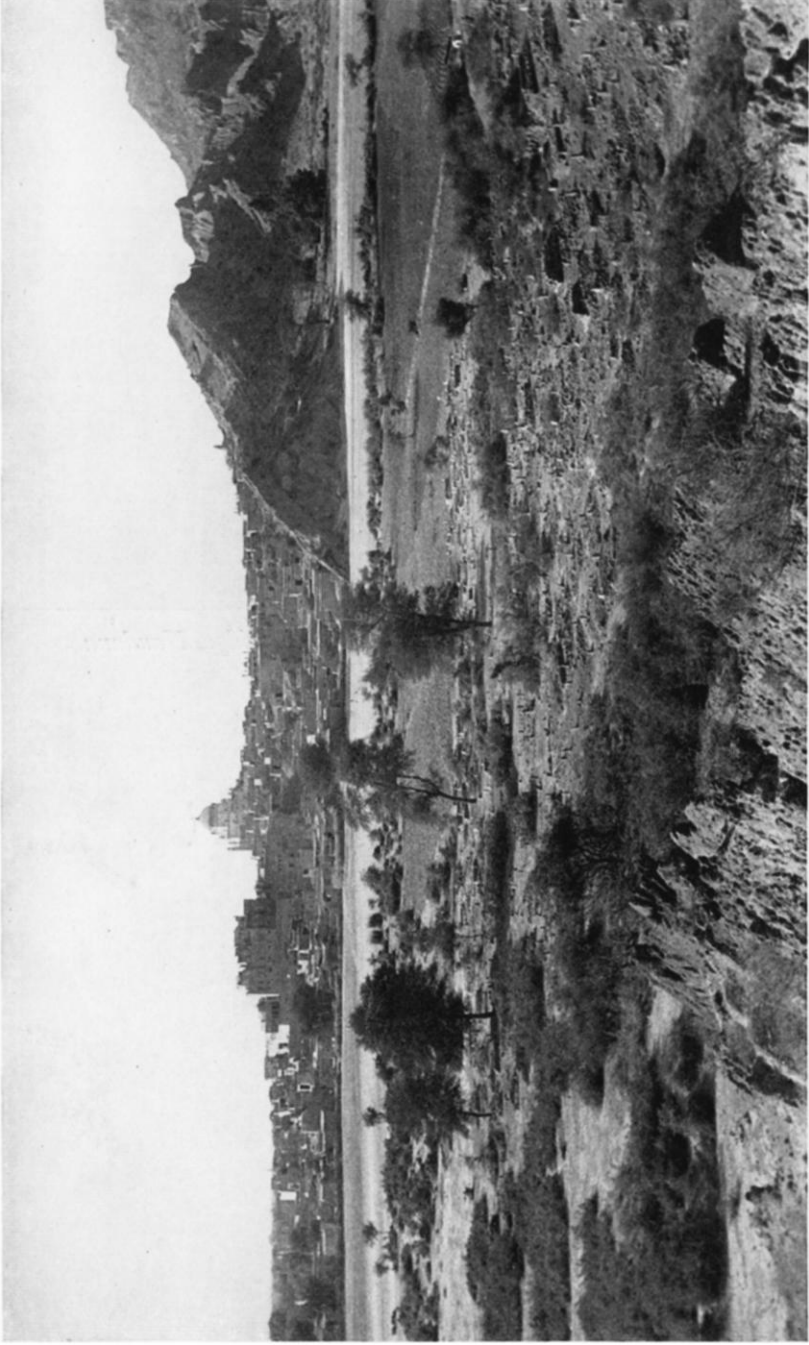
*Already General Cunningham had rightly identified Boukephala with Jalalpur. But he apparently did not realize that by doing so and yet looking for the place of passage at Dilawar he came into direct conflict with Strabo's definite statement. We have here one of the instances where a kind of true antiquarian instinct led that distinguished first explorer of India's ancient sites to arrive at identifications which have proved right in spite of the inconclusive or otherwise defective arguments he advanced for them.



3. Ruined bastion at eastern end of fortified ridge, Nandana



4. Eroded hills above Kandar Kas bed



5. Jalalpur, from across the mouth of the Kandar Kas

The road so far, though very stony, is perfectly practicable for laden animals, including camels, even in the neglected state in which it has fallen since most of the local traffic from this part of the Salt Range to the river has been diverted to the Grand Trunk Road in the east and to the road practicable for carts between Chakwal and Pind Dadan Khan in the west. The road in a number of places shows distinct marks of having been cut into rocky ledges to secure a better gradient. Though perhaps not so well aligned, it reminded me of the ancient roads constructed in Buddhist times across the passes connecting Lower Swat with the Peshawar Valley.

Immediately above the depression just mentioned, forming a kind of natural fosse, there rises very abruptly a rocky ridge bearing on its top the ruined structures of Nandana and along its precipitous northern slopes the remains of a boldly built line of wall (see Plate 3). This fortified ridge completely bars further descent on the route; for the two small valleys already mentioned turn on either side of it into deep and extremely narrow gorges flanked for some distance by almost vertical rock walls, hundreds of feet high (see Plate 2). These gorges are completely commanded from the ridge and would allow of no passage even to men on foot as long as the ridge were defended. Nor could the heights towering above them be readily climbed and the ridge reached from them by arrows or similar missiles.

The wall running along the north face of the ridge for about 300 yards was very massively built with large uncut slabs of stone quarried on the spot. But owing to the steepness of the slope its foundations have given way over most of its length. But some circular bastions solidly built with slanting walls and large slabs of cut stone have stood their place in great strength and bear a look of considerable antiquity. The slopes below the top of the ridge and within the defences are covered with the debris of rough stone walls wherever there was room left for dwellings, and between them there passes the road across a shoulder of the ridge.

The highest portion of the ridge rises some 200 feet above the depression previously referred to. Its top bears the ruins of a Hindu temple (see Plate 2) and at its other end the remains of a large structure too badly injured for safe determination of its character (see Plate 3). The temple probably dates from the times of the Hindu Shahiyas, but the very high and massively built terraces on which these ruins rise are certainly of far greater antiquity.

The southern face of the ridge is for the most part lined by cliffs so steep as scarcely to need defences. But where the road winds down it in steep zigzags it is guarded by a very imposing round bastion built with large and carefully set slabs. About 500 feet below the top of the ridge the road thus defended reaches the valley bottom where the two spring-fed streams descending the gorges unite. The rivulet formed by them runs for half a mile in a picturesque narrow valley before it is caught at its mouth in small canals to carry its life-giving waters to the orchards and fields of the large village of Baghanwala. Appropriately called after its gardens, Baghanwala looks a veritable oasis at the otherwise arid foot of the frowning hill chain. It might have well provided a very suitable place of residence in times of peace for whoever held charge of Nandana, that ancient gate of the Salt Range.

Ten miles across the alluvial plain below Baghanwala bring us to that point

near the village of Haranpur where the Jhelum, flowing in a single well-defined bed, offers a particularly convenient crossing-place. This is proved also by the position of the bridge over which the Sindsagar branch of the North-Western Railway here passes the river. It is here that we may look for the place where Poros guarded the river passage and where Alexander's main camp stood facing that of his adversary.

I have already had occasion to point out that the road distance between Haranpur and Jalalpur corresponds exactly to the $17\frac{1}{2}$ miles recorded by Arrian between Alexander's camp and the place where his passage of the Hydaspes took place. It only remains to add that, as the map shows, the present road between the two places runs at such a distance from the river as would have effectively screened the final move of Alexander's force from the enemy's observation, a point specially mentioned by Arrian.

As I stood by the rocky brink of the range near the rest-house of Ara and let my eyes sweep down the defile of Nandana to the glittering line of the waters of the Hydaspes and across the vast fertile plain beyond it, I felt as if caught by the thoughts with which some of Alexander's brave war-hardened Macedonians might well have viewed this great vista. The mountains and deserts across which they had so valiantly fought their way under their young king over vast stretches of Asia, lay now behind them. But would not these interminable plains stretching away to the Ganges, inviting as all the riches and strange things there might appear to their incomparable leader, ultimately set a limit to the world conqueror's ambition and force him to give way before their longing to return to their distant homeland?