time to look along the ledge which winds like a pathway round all the inequalities of the mountain to the southern arête. It appeared to be quite free from snow and ice, and would not, I fancy, have offered any very serious obstacle to our traversing it. I also came upon a deeply-rusted hook driven into the rock, a relic, I suppose, of Mr. Grove's ascent in 1867.

Having slid down the rope we soon found that the remainder of the ledge was very different from that above; instead of offering firm foothold on the rock, it was now loaded with incoherent snow, and the few knobs of rock which protruded through this were glazed with ice, and, for the most part, rotten. It was, however, of no great extent, and we were soon able to plunge through deep snow on to the ridge. Petrus, who had been more or less erratic in his movements all day, had disappeared. We followed his traces, occasionally on the arête, but more often on the steep slope to the north of it, and in ¾ hr., or at 1.45 P.M. found him on the summit.

The day was perfectly calm and the view cloudless. Time fled swiftly, and when Burgener came up to me with the rope at 2.30, I could hardly believe we had been ¾ hour on the summit.

Then we descended the chain-clad north-east arête; halted a few minutes on the elbow to watch Penhall's party, who had just come in sight on the Zmutt arête, and with a parting jodel plunged down the slopes to the cabane, great care, however, being required to avoid the broken glass and sardine boxes which have here accumulated in large quantities. After a short halt we ran down to the glacier; took the glacier route and soon arrived at the 'roches moutonnées.' These, I believe, it is usual to turn by a reascent over loose stones to the left. Burgener, however, knowing my great dislike to loose stones, peered over the rocks, and soon found a practicable line a little to the right. We descended this, and, after a short glissade, reached the level Furgen Glacier. It was just 5.30 as we unbuckled our gaiters on the moraine under the Hörnli, and 1½ hr. later we tramped down the high street of Zermatt, and were soon enjoying the rewards of the faithful.

An Ascent of Mount Argaeus. By the Rev. H. F. Tozer.

SEVERAL years ago, in studying the south-eastern portion of the map of Asia Minor, I became interested in one of those groups of fine wavy lines, gathered up to a dark head,

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which signify a lofty solitary mountain. This was Mount Argaeus. I also made myself acquainted with its general appearance from the views that had been published of it, taken from different points, by Hamilton in his 'Researches in Asia Minor,' and Texier in his 'Asie Mineure.' On all grounds it seemed a very attractive mountain, and I promised myself that, if I ever made my way into that country, I would attempt to ascend it. My design was long delayed, partly owing to the terrible famine which desolated that district in 1874, and partly on account of the Russo-Turkish war, and other causes. At last, in the summer of 1879, the severe quarantines which were established in the West against the Black Sea having been removed, there seemed to be a favourable opportunity of penetrating into Asia Minor and Armenia, and accordingly I left England on July 3, bound in the first instance for Constantinople, by way of Marseilles, in the company of my friend, Mr. T. M. Crowder, with whom it had been my good fortune to make four previous journeys in the interior of Greece and European Turkey, and to ascend many of the peaks in the neighbourhood of the Ægean. We reached that place on July 11, and were thus able to complete our final preparations for our journey before the departure of the corresponding French steamer for the ports on the south coast of the Black Sea. On July 16 we landed at Samsoun, the most important town between Sinope and Trebizond, and the next day started on horseback for Amasia, which place lay three days' journey towards the south. After visiting the famous rock-hewn tombs of the Kings of Pontus in the neighbourhood of that city, we proceeded to the large and central town of Yeuzgatt, further in the interior, taking on our way the extraordinary semi-Assyrian buildings and bas-reliefs, the remains of which may be seen near the villages of Euyuk and Boghaz-Keui, within the borders of what in ancient times was the district of Galatia. At Yeuzgatt commenced the last stage of our journey towards Argaeus, our immediate destination being the city of Kaiserieh, which lies at its foot on the north-eastern side.

It was in the afternoon of the eleventh day from our leaving Samsoun that the mountain first came in view. We were riding along a tract of undulating ground, which having been parched by the heat and drought of several successive months —for this summer, in contrast to the wet and cold which had prevailed in England, was said everywhere in Asia Minor to have been the hottest that had been known within the memory of man—resembled almost a steppe in its bareness and mono-

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tony. Suddenly, in crossing some low hills, I caught sight of a very distant peak, which was appearing above the horizon almost due south of us, with a large mass of snow on one side. I pointed it out to my companion, and exclaimed—'Surely that can be nothing but Argaeus.' One of our Turkish guards, overhearing this, cried 'Erjäus! Erjäus! that is it!' So closely has the ancient form been retained at the present day! We heard the name constantly afterwards in the mouths both of Turks and Armenians, and it always took this form. Gradually, as the mountain rose, a second and lower peak appeared to the right of the former one; both were beautifully cut, and a large snow-bed lay in the hollow between them. When at last the whole was revealed, it reminded both of us of the peak of Mount Athos as seen from its eastern side. We knew it to be a volcano, and yet it had none of the rounded forms that such mountains usually have, but showed the sharp and pointed outline of an Alp. It was here more than fifty miles distant in a direct line.

A day later we were approaching the Halys, the largest river in Asia Minor, which rises near the north-eastern frontier of the country, then describes a vast arc towards the south, and afterwards bending northwards again, flows into the sea between Sinope and Samsoun. The road from Yeuzgatt to Kaiserieh cuts this arc about the middle of its course. As we descended from a low pass, our way led through a rough and stony defile, and when this opened out, the rocks, from being of a clayey nature before, became basaltic, showing us that we were approaching a volcanic region. For some time we had seen before us a sort of deep cut in the nearer mountains with cliffs of basalt on the further side of it, and at last a turn of the road brought us in sight of the river, which runs through it. The stream is here spanned by a highly picturesque bridge of fifteen round arches of various sizes, rising irregularly towards the middle, from which it obtains its name of Tchok Gheuz Kiuprisi, or the 'Bridge of the Numerous Eyes.' The width of the stream may be somewhat over 100 feet, but both the length of the bridge and the immense bed of shingle along its right bank give evidence of the size to which it is swollen in winter. After pitching our tent in the shingle we proceeded to bathe, and in doing so soon discovered why the Turks have given the Halys the name of the Red River (Kizil Irmak), for the water was filled with a thick red deposit, and the mud at the sides was of a most adhesive nature. This accounts for the formation of the great delta at its mouth, which we had seen from the sea between Sinope and Samsoun.

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The next morning we commenced our last day's journey to Kaiserieh. Our road lay over dusty volcanic hills, where the heat appeared to us greater than on any previous day; but this was no matter for surprise, for besides the cindery nature of the soil, and its being still the height of summer, we had journeyed far to the south, being now between half and two-thirds of the distance from the Black Sea to the Mediterranean. At length we began to ascend somewhat rapidly, and after a brief halt under some fruit trees near a hamlet in a sequestered upland valley, we reached the brow of a high hill from which Kaiserieh was visible. At our feet lay an extensive plain, perfectly level and light-brown in colour, and at the further end of this, about eight miles off, at the edge of the lowest spurs of Argaeus, appeared what looked like a dark carpet outspread upon it—for we could hardly believe it to be a city, since neither minarets, nor trees, nor other individual objects could yet be distinguished. Argaeus itself, which we now saw for the first time in its full proportions from base to summit, was a most imposing object, with its successive peaks, the snow-fields beneath them, and the numerous volcanic cones about its flanks and base. From the brow we descended by a steep path, having on our left the large Armenian village of Erkilet, the houses of which climb up an abrupt hillside, while its plantations and vineyards extend below in a long sweep of green. It took us still 1½ hr. to ride across the plain, which is covered with volcanic stones and powder, and exactly corresponds to what Strabo describes it to have been in his time; he adds that it was unproductive and uncultivated.*

I will not stop to describe the city of Kaiserieh, the ancient Cæsareia, but will proceed at once to Argaeus. We started early in the morning of the last day of July for the village of Everek on the southern side of the mountain, that being generally considered the most favourable point of attack. Our way lay over a shoulder of Argaeus, but before we reached its outliers it was necessary to ride for nearly an hour over the dusty plain, where we met numerous men of all classes mounted on donkeys, on their way to the bazaars; for during the summer the merchants of Kaiserieh, great and small, when the business of the day is over, retire from the city to their cottages, with which the hillsides are studded. We passed the double cone of the lofty Ali Dagh on our left, and then commenced a steep ascent over lava and basalt, until we reached a plateau of

* Strabo, p. 538.

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no great width, covered with gardens, vineyards, and plantations. Among these lay some of the humble summer retreats. Again we mount, and again we find a similar level, bright like the former one with artificial vegetation. From this point, looking back, the eye ranges over a number of craters that stand about the base or on the flanks of the mountain, beyond which Kaiserieh appears, outspread upon the level ground. Then follows another long ascent overlooking a rocky valley, until after four hours an extensive stony upland appears, between 6,000 and 7,000 feet above the sea, the dreariness of which is only relieved in places by a clear trout stream which hurries through it. From this point the snow-fields on the eastern side of Argaeus are finely seen; but as I looked at them, misgivings about our ascent began to creep into my mind, for whereas the mountain had been cloudless up to this time ever since we first saw it, now wreaths of vapour began to gather about the summits, and other clouds were drifting up from the south, as if portending a change of weather. I could not help fearing a fate similar to that Hamilton experienced, who after a fortnight of clear sky saw similar clouds appear as he started for the ascent, and was enveloped in mist and drizzling rain before he reached the top.

Here we found a *yaila*, or summer encampment of Turkish shepherds, whose flocks were cropping the scanty herbage The covering of their tents was black, but the sides were composed of common brown cloth. They brought out carpets and bedding for us to rest on, and we found them clean; the fact of their possessing them was a sufficient evidence that they were not poor. After a pleasant *siesta* at this spot we proceeded to the top of the pass, and as we descended on the other side caught sight of other craters still more definitely marked, which from their shape and number carried our thoughts back to the volcanic region of Auvergne. Beyond these, as we looked through a fold in the nearer hills, appeared a lake that occupied the centre of a plain, and on the further side of it a succession of mountain chains. The descent to Everek was long and wearisome, all the more so because we knew that the further we went the hotter our resting-place would be, and the greater the distance that would separate us from the higher parts of Argaeus. We ultimately found that that place is only a few hundred feet higher than Kaiserieh, and being situated on the southern side of the mountain would naturally be hotter, were it not for the abundant vegetation in the midst of which it lies. The source of all this freshness is found in a copious spring of limpid water—almost a small river at its birth—which wells

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out into an extensive stone basin or reservoir at the entrance of the village. In this the boys of Everek are fond of bathing, so that, as the water supply of the place comes from here, the natives have the unusual arrangement of washing in the water first and drinking it afterwards. The stream, however, is divided into numerous channels, and consequently, as you look down from above, the plain in this part seems to be inundated with a sea of verdure.

Our first care on reaching Everek was to inquire about a guide for Argaeus, and we found the general opinion to be that an Armenian named Stephan knew more about the mountain than anyone else; he was reputed to have made the ascent several times. When he had been fetched, he proved to be an old man, and though he appeared still vigorous, we felt somewhat doubtful whether he would reach the summit. However, we engaged him, and he presented himself in readiness about noon on the following day, which was the time we had fixed for starting. Our company, who were all mounted, consisted of our two selves and this guide, our servant, one of the guards who had accompanied us from Kaiserieh, and two men to whom our horses belonged. A baggage horse carried our tent, our camp beds, and some provisions. When we reached the open country the view of the mountain was very striking, for its peaks look sharper from here than they do from the northern side, though there is less snow upon them. The clouds which had caused me misgivings the day before had now dispersed, and all the summits were perfectly clear. Our course lay towards the north, and after retracing our steps along the plain by the same road by which we had approached Everek, we began to ascend between some of the lower craters, first gradually, and then more steeply, in the direction of the highest peak. After two hours we arrived at a copious spring which gushes out into a trough, and as this was the last water we should meet with on the mountain we gave our horses a long drink and took a supply for ourselves. We then continued to mount until the slopes became so steep that we wondered how our baggage horse could manage to struggle up them, and after two hours from the spring halted on the mountain side at a height of between eight and nine thousand feet above the sea. Here we determined to pass the night, for the rocks afforded shelter for our attendants, and the dry stems of the dwarf juniper, large patches of which covered the ground, provided fuel to make a fire. While I was wandering about amongst these I put up a fine hare. There are no forest trees now on Argaeus, though Strabo speaks of

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extensive groves as covering its sides in his time, thus forming a contrast to the bareness of the rest of Cappadocia.

We pitched our tent, and then put together the alpenstock and ice-axe, both of which we had brought from England in two pieces; the alpenstock having been cut in two and arranged with brass ferules in the middle, and a screw within to hold the two parts together; the ice-axe having a moveable head, which was secured by a steel screw passing through both it and the metal-work at the top of the pole. This, no doubt, was not as strong as if it had been in one piece, but it would have required a very unusual strain to break it. The usefulness—I might almost say necessity—of these contrivances will be obvious to anyone who is accustomed to Eastern travel, for a pole of any length, or a crooked object like an axe, is almost certain to be broken when packed on a baggage horse, either from a collision with another laden animal, or from striking against a rock by the roadside, or finally from one of those capsizes of the luggage which periodically happen. It was only by constant watchfulness that even our short implements were preserved intact, for the postilions and muleteers, if left to themselves, would always fasten them on the outside of the baggage, where a crash was only a question of time. As to provisions—we determined to take as little as possible, for our old guide could not be expected to carry anything. We therefore contented ourselves with a piece of meat and some bread each, and a small flask of brandy; this, together with the aneroid and a map and compass, formed the whole of our equipment.

The next morning (August 2) we were off—that is, Mr. Crowder, Stephan, and myself—at 2 A.M., after a cup of hot coffee, which was welcome, for the thermometer had gone down to 25°. By good luck the moon was at the full, for without her brilliant light it would have been impossible to commence the ascent by night, owing to the extreme roughness of the mountain sides. Thus illuminated, the wild solitudes in front of us, the lower craters and the indistinct expanse of plain and mountains beyond, formed a very impressive scene. In the plain the lake, which we had seen in descending the pass from Kaiserieh, was visible. Our guide set off at much too fast a pace, which we in vain endeavoured to check, and the natural result was that he had to rest frequently, and showed signs of fatigue when we reached the steeper ground. Our way lay up a gully, which comes down from the higher peaks, and may at one time in its upper part have formed a portion of a crater. After two hours of

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moderately rapid ascent we reached the first patch of snow, and here began a climb of 1,600 feet, which occupied two hours more, and was as hard a piece of work as either of us had ever experienced; for the angle was extremely steep, and the face of the mountain was covered with loose stones, and masses of fallen rock equally untrustworthy to the foot. When we were in the middle of this climb the first rays of the sun fell on the porphyry rocks above us, and produced a splendid effect by turning them to a bright crimson. After a time we took to the rocks at the side of this talus, thinking to find a firmer footing on them; but these were of such a friable nature that they gave way even when grasped with the hand, so that it was a choice of evils between this and the screes we had left. In an ordinary season, so our guide afterwards told us, this gully would be half full of snow, but the great heat of last summer had caused it almost entirely to disappear. In this way we escaped the only real danger which attends this expedition—that, namely, arising from avalanches of stones caused by the melting of the snow in which they are embedded. Both Hamilton and Tchihatcheff, the two travellers who had ascended Argaeus before us, and whose visits took place at the same time of year as our own—the one at the end of July, the other in the middle of August—speak of the risk arising from this cause. The latter of these two writers, whose account throughout is somewhat rhapsodical, speaks of daybreak being announced by detonations, followed by a hail of blocks of stone in all directions, and the more cautious Hamilton describes the stones at sunrise as 'rushing past at a rapid rate, and making the ascent in some places a work of toil and hazard.'* In consequence of this, by the advice of his guides, he descended by a different route. As there was no snow here when we passed, we neither saw nor heard anything of these falling stones. It is clear also that Hamilton was mistaken in speaking of glaciers as existing here; there are none, in fact, on either side of the mountain.

At last, about 6 o'clock, we reached the ridge, where there is a long arête of snow, joining two sets of summits, at the head of a vast snow-slope on the north side, which forms a conspicuous object when seen from Kaiserieh. Our guide was now an hour or more behind, and as the cliffs on our left, away from the arête, were quite precipitous, we thought at first that we had reached the highest attainable point. However, we

* Tchihatcheff, 'Asie Mineure,' i. 445, 446; Hamilton, 'Researches in Asia Minor,' ii. 278.

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discovered a way by which it was possible to scramble round the foot of these, cutting a few steps in the frozen snow, and thus reached a point some 200 feet higher, at the base of the final peak, which rises about 50 feet above, and seemed to us perpendicular and, from this side, wholly impracticable—if, indeed, at the present day anything can be pronounced impracticable. The view was quite clear and very extensive, including the long line of the Anti-Taurus to the east, the Allah Dagh and other mountains that run down towards Lycaonia to the south-west, and to the north the vast undulating plains of the interior, which we had crossed in coming from Yeuzgatt. One or two small lakes were visible, both that which we had seen at starting, and another towards the north-east, which we afterwards found to be covered with a salt incrustation; this circumstance would account for its being so clearly seen. We could also trace the depression in which the Halys runs, though the river itself was concealed. Kaiserieh lay below us, as it appeared when first we saw it, like a dark carpet spread upon the bare plain. But far the most remarkable feature was the mountain itself, for the lofty pinnacles of red porphyritic rock, rising from among the snows around and beneath us—veritable *aiguilles*—were as wonderful a sight as can well be conceived. The crater or craters which once occupied the summit are too much broken away to be easily traceable, the best marked being that which faces east; but below, all around the base of the mountain, is a belt of volcanic cones. The belief that prevailed among the ancients that on clear days both the Euxine and the Mediterranean were visible from the top* is wholly ungrounded, on account of the distance, and the height of the intervening mountains.

We remained 1½ hr. on and about the summit, during which time we breakfasted and made some observations. Before this time had expired our old guide had made his way up to us, much to the credit of his pluck. The aneroid gave the elevation as 9,100 feet above Kaiserieh, and if we take 4,050 feet as our estimate of the height of that place, this will give a total of 13,150 feet as the height of Argaeus above the sea—an estimate which nearly corresponds with that of Hamilton, who puts it at about 13,000 feet.† I was much

* Strabo, as above.

† Hamilton, ii. 279. The estimate of the height of Kaiserieh here given is derived from Col. Wilson, now British Consul-General at Sivas, who had acquired great experience in the measurement of heights on the Palestine survey. He told me that he had found the neighbour-

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disappointed at the absence of flowers, but even at this altitude the great heat had left but few remaining, whereas Hamilton speaks of the ground as being enamelled with them even lower down than the spot where we had encamped. The flora of a lofty mountain in this position, on the confines of Europe and Asia, ought to be highly interesting. As we were scrambling about the rocks close to the top, we found, to our great surprise, that in places they were perforated with ancient human habitations. One of these wound inwards to a considerable depth, with rude niches hollowed in the sides. We knew already that Cappadocia was a land of rock-dwellings, but it seemed none the less strange that any should be met with here. Who was it that made for himself this aërial abode? Was it one of the primæval inhabitants? But in those days, when stores of food were scanty, what was the inducement for anyone to occupy so inhospitable a spot? Was it a goatherd who was accustomed to seek refuge here from stress of weather? But where was the herbage on these barren rocks which should tempt him to climb to such a height? And, besides, the labour required for such a work was not likely to have been expended by a casual visitor. Or was it a hermit? If so, he was a Stylite indeed, for he had elevated himself on the highest rocky column in the country. Anyhow, there was no question of their being artificial abodes, for, besides the niches, the marks of the chisel or some hard instrument were evident on the roof and sides.

Our descent was uneventful. At first we took a somewhat more direct course than that by which we had ascended, but afterwards we struck into our former route, and thus reached our encampment in rather over two hours. There we reposed agreeably for some time, and in the course of the afternoon returned to Everek.

It now remains to say a word about former ascents of this mountain. It seems to have been ascended even in ancient times, for Strabo mentions this, adding, at the same time, that few attempted it. Possibly this may have been connected, as

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ing village of Talas, where he stayed, by careful observation, both with the aneroid and the mercurial barometer, to be 4,355 feet, and this cannot be more than 300 feet above the city. Tchihatcheff makes the height of Argaeus 3,841 mètres, which would be some 500 feet lower than our measurement. Three weeks after our visit the mountain was again ascended by Captain Cooper, the newly-appointed British Vice-Consul, and Dr. Farnsworth, an American missionary. Captain Cooper found the elevation by the boiling-point a little way below the place where our measurement was taken to be 13,024 feet, and estimated the height of the summit at 13,100 feet.

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was the case on high mountains in Greece, with some act of worship, for another author tells us that the summit was believed to be the abode of a god.* The first ascent in modern times may fairly be considered mythical. The story runs as follows:—'A traveller once came from Frangistan in search of a rare plant which grew only on the summit of Argaeus, having ten leaves round its stalk and a flower in the centre. Here it was said to be guarded by a watchful serpent, which only slept one hour out of the four-and-twenty. The traveller in vain tried to persuade some of the natives to accompany him and point out the way; none of them would venture, and at length he made the ascent alone. Failing, however, in his attempt to surprise the dragon, he was himself destroyed. The story adds that he was afterwards discovered, transformed into a book, which was taken to Cæsareia, and thence found its way back into Frangistan.'† Another attempt—if attempt it can be called—was historical, and, unfortunately, had a fatal ending. This was by an American missionary, who lies buried at Kaiserieh, where there are various versions of his story. The following account is given by the writer just quoted, though he says that even in his time it was difficult to ascertain the truth:—'The unfortunate traveller ascended the mountain from Hissarjik, on the north side, not intending or expecting to reach the top; but on reaching the snow, which appeared hard and easy of ascent, he determined, notwithstanding the advice of his guide, who refused to accompany him any further, to make the attempt alone. After a time, finding it impossible to get on, he sat down, in an almost exhausted state, and rolled to the bottom, where he lay for half-an-hour, wet and shivering in the snow. On recovering a little, he drank some cold water, rode home 4 hrs. in a heavy rain, and ate a great quantity of fruit. It was during the month of October, and he caught the fever of the season, but still intended to attempt the ascent again from the other side when he should recover. However, he got worse, and expired in a fortnight. One account says that he died in six days, another in two; while some assert that his death was occasioned by the wounds he received in his fall.‡

We now come to the real ascents, those of Hamilton and Tchihatcheff. The former of these travellers, who was the pioneer of all future explorers of the mountain, started from Everek on July 29, 1837, with several guides and a body

* Solinus, xlv. 4. † Hamilton, ii. 275.
‡ Hamilton, ii. 266.

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of guards, and rode a good distance farther up the mountain than we did on the first day. He was unlucky enough, however, to be caught in drizzling rain, and having no tent, was forced to bivouac on a carpet under a large stone. The next morning he took the same course as we did, except that he kept more to the left in ascending the side of the gully, and mounting for a considerable distance over the snow, which then covered the detritus and fallen rocks, made his way straight to the summit, or rather the rocks immediately below the summit, without approaching the arête. The sky here was clear above him, but the view was almost entirely intercepted by a sea of clouds below. M. de Tchihatcheff, the Russian *savant*, also devoted two days to the ascent, and followed much the same route, but I am unable to discover from his account whether what he calls the highest attainable point is that which Hamilton and we ourselves reached, or whether it is only the arête. What makes it probable that it was the latter is that he computes the height of the summit above this as 100 mètres, an estimate which it seems hardly possible for anyone to arrive at who had reached the higher point. His ascent was made on August 15 and 16, 1848.

The interest which attaches to Argaeus arises partly from its being considerably the highest mountain in Asia Minor, and still more from its being the second in importance of the remarkable extinct volcanoes which form a line through that country and Armenia. This commences in the Burnt Country, as it was called in ancient times (Κατακεκαυμένη), in the west of Phrygia, where the surface of the land over a wide area is covered with well-marked craters; then rises in Argaeus; afterwards reappears in the centre of Armenia, where the massive Bingheul Dagh stands, two or three days' journey to the south of Erzeroum, and the loftier Sipan Dagh, above the lake of Van; until it reaches its final point and greatest elevation in Ararat. No eruption of Argaeus has occurred within the historic period, but Strabo says that in his time flames used to burst out of fissures around its base. As might be expected, the neighbouring country is much exposed to earthquakes, and that of 1835, in particular, did much damage and destroyed many lives in Kaiserieh. It will be seen from the account that I have given that there is no real difficulty in the ascent.

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