

## NARRATIVE OF A SECOND JOURNEY TO PALMYRA,

including an exploration of the Alpine regions of Lebanon and Anti-Lebanon, and the southern half of the Nusairy Chain.

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(Continued from October "Quarterly Statement," p. 328.)

As soon as the moon rose we were on our way again, descending at first by an easy but perceptible gradient, then almost imperceptibly towards the plain of the Orontes. The air became quite chilly as the night wore on, and both man and beast became oppressed with sleepiness. Our guide, Rusheid, rode before us on a white camel, and after the moon set his camel was all that we could see in the darkness. Rusheid never for a moment missed his way, and just as morning broke he dismounted at the first wells, about three hours east of Barri. He found them choked with locusts, and the water quite undrinkable. He found there two wild swine which had come in vain to search for water. We had nothing left after this disappointment but to press on over the seemingly endless plain to Barri. We arrived at 6½ a.m., twenty-six hours after leaving el-Weshen. Just before reaching it we came upon a considerable herd of gazelles.

*Wednesday, July 30.*—Barometer at 7 a.m. 28.4, height, 1,900 feet. The water at Barri is sweet and cool, and the refreshment to mind and body of the sparkling spring and flowing stream was indescribable. We pitched our tent, and, as soon as we had breakfasted, lay down to enjoy a much-needed sleep. A furious wind sifted the dust in clouds into our tent, and over us as we lay in bed, but nothing could keep us from sleeping. We awoke at midday to take our lunch, and then took an afternoon nap.

Toward evening we went over to take a photograph of the village from the *tel*. Every village in these parts has a *tel*, or hill, the site of an ancient castle or tower, which, in falling to ruins, leaves a truncated cone formed by the *débris* of the edifice. The houses of Barri are almost all conical, the prevailing style in all the villages of the Orontes plain between Hems and Hamah. During our walk we collected *Heliotropium villosum*, Willd., and *Euphorbia lanata*, Sieb., var. *microphylla*, Post.

A night's rest, added to that of the day, made us forget the fatigues, heat and bad water of our desert journey, and prepared us for the twelve days which still lay before us.

*Thursday, July 31.*—We left Barri at 6½ a.m., and rode over the level plain for two hours and a half to Salamyeh. Salamyeh is an important

town, the centre of a *Sanjag*, with a large stone castle, a mejlis, qâdi, and considerable traffic. All the inhabitants but one are Mohammedans. This one keeps a shop, and is a general agent and medium of communication with Christian villages. He gave me a specimen of a piece of bituminous shale (*i.e.*, dolomite, charged with 39 per cent. of hydrocarbons). Dr. Adams and Professor Day, of the Syrian Protestant College, kindly made the following report on it:

Colour, black; streak, greyish-brown; lustre, dull powder-brown; brittleness, extreme; hardness, 2-3; specific gravity, 2.03 (compared with pure water). Combustible with ease; burns with a yellow, luminous, very smoky flame for a short time, after which it does not continue to glow as a coal. The *residue* after ignition is whitish-grey. The *bulk* after ignition is equal to the original piece. *Loss in weight* after ignition, 33 per cent. It is impossible to oxidise all the combustible materials (especially that in the centre), even of small pieces before the blowpipe. *Pulverized* and *distilled* for two hours over an alcohol flame the material lost 25 per cent. in weight, mostly as gases, with some heavy volatile oils. The gases are unfit for illuminating purposes. The *residue* after ignition was found to be Calcium carbonate  $\text{CaCO}_3$ , and Magnesium carbonate  $\text{MgCO}_3$ . The mineral is found in considerable quantities in the neighbourhood of Salamyeh, and strongly resembles the shales which over and underlies the Lebanon coal.

Most of the houses in Salamyeh are of the conical type of which we had seen so much in Barri and its surrounding villages. They are made of sun-dried bricks, laid up with mud, and braced above by horizontal poles, the ends of which are seen protruding from the cone. The great pitch of the sides of the cone is to prevent the rain from percolating through so porous a material.



View of a portion of Salamyeh, showing the form of houses common in the Orontes Valley.

Half-an-hour west of Salamyeh are two truncated conical tels, on which are ruined castles, once strategic points of importance in defending the Orontes valley from the attacks of the savage hordes of the desert. They are still picturesque features of the landscape.

The road to Hamah, soon after leaving Salamyeh, passes through a swampy tract, in which there is fair pasture during the whole summer. The margin of this swamp was dotted with Bedawin tents, and the pasture

covered with innumerable flocks and herds. The stream that flows out of the swamp empties into the Orontes.

The view of the sparkling river, and the fertile fields and orchards along its banks, was unspeakably refreshing to us after the fortnight in the desert. Every turn of the river opened a new vista of verdure and beauty. Hamah itself, built on a number of hills and bluffs, rising out of the luxuriant foliage of the orchards, is one of the most picturesque cities of Syria. We reached the hospitable house of Mr. Anis Sallûm at 2½ p.m., and were glad for one night to sleep in a house again. Barometer, 29·74, height, 990 feet.

*Friday, August 1.*—As we were obliged to replenish our stores in Hamah, we did not leave until half past ten o'clock in the morning. Our way lay for three hours over the almost-level plateau, which is doubtless an old lake bottom, out of which the river has scooped its proper valley, at a depth of about a hundred and fifty feet. This plateau is composed of a deep, rich, reddish loam of exhaustless fertility. It has been cultivated for cereals from time immemorial. At this season it is almost destitute of vegetation. At numerous points we passed cisterns by the wayside, constructed so as to store rain-water through the harvesting season, for the use of man and beast. At the time we passed they were all dry. After crossing the plain we began to enter the foot-hills of the Nusairy chain. We followed up the course of a stream which had still a considerable volume of water in pools along its bed, but so befouled by cattle that even our horses could hardly be induced to drink of it, and we were not inclined to take a bath in it. By its banks we collected *Faniculum officinale*, L., and *Lythrum Salicaria*, L. As we rode farther into the hills the scenery became more wild, the mountains began to assume bold and rugged features, and soon, what had appeared from a distance as a uniform, rounded, whale-back ridge, developed into crags and peaks which almost rival those of Scotland for savage grandeur. We passed through many scrubs of oak and styrax. But for the whole distance from Hamah to within twenty minutes of Qal'at-el-Musyâf we did not encounter a single spring or stream of drinkable water. It was not a little refreshing, after so long abstinence, to find oozing out of the hill-side, just before reaching the castle, a cool, limpid spring of excellent water.

Qal'at-el-Musyâf is a small walled town, with a fine castle at the north-east angle of its wall. It is composed of flat-roofed houses, mostly built of unhewn stone, and is inhabited by Isma'îlyeh. There is only one Christian, a jeweller and goldsmith. There are no Nusairyeh, they and their religion being cordially hated and roundly cursed by the Isma'îlyeh. There is a mosque, and a khân, and a few shops.

As was our custom on coming to a village, we asked the sheikh, the Amîr Ibrahim, to assign us a place to pitch our tents, and to secure for us the supplies which we needed. To our surprise we found him churlish and inhospitable, and could not get any satisfaction from him. We then sought out and found a suitable place for our tent, but we were greatly

annoyed by the surly manner of the sheikh's son, and one of his companions, a village bully, who tried to prevent the other people from having anything to do with us. At last, however, by our paying no attention to his rudenesses, he became tired of the attempt to annoy us, and took himself off. We then obtained the necessary supplies, and, after placing a guard to prevent depredations during the night, retired. We were not molested, and in the morning found even the sheikh's son somewhat civil. We inferred from some things that were said that the parties who had treated us so rudely the night before were suspicious of us, and supposed that we were travelling through the country with the intention of spying it out, and in some way injuring them.

*Saturday, August 2.*—6 a.m., Qal'at-el-Musyáf, barometer 28.62, height 1,675. As we passed through the town we bought a few grapes, the first we had tasted this season. We also found good watermelons. Our way lay along the flank of the mountain, by running water, and through fertile orchards and fields. The mountains to the right began to assume bold outlines, and the wild ravines between the peaks seemed quite impassable. After passing through brakes of *Arbutus Andrachne*, L., and myrtle, in an hour from Qal'at-el-Musyáf, we came to *el-Beidhyeh*, a village inhabited wholly by Christians of the Greek sect. Twenty-five minutes farther on we passed *el-Bustán*, a Nusairy village, two minutes to the right of our road. Five minutes farther on we passed through *Fiddarah*, and forty minutes farther *Shumeseh*, two Nusairy villages. Passing through the latter village we made our way without any road half an hour along the mountain side, and then struck a steep goat path, up which we led our horses, often at an angle of thirty degrees. On this slope we found a *Sideritis*-near *var. incana* of *S. Libanotica*, but probably a new species. The regular road over the mountain to *el-Bireh*, which we struck half-way up the incline, was passable, though none of the easiest. It was not till nearly noon that we reached *el-Bireh*, which is situated in a valley several hundred feet below the top of the chain. The barometer at 2 p.m. read 27.8, height, 2,750 feet. The water supply of *el-Bireh* comes from a fountain almost at the top of the ridge, and is brought down in an open gutter at which the herdsmen water their animals, and into which impurities of many kinds find their way. This carelessness about the purity of the water supply is the more noteworthy, inasmuch as the Orientals are rather remarkable for their fastidiousness in this respect. They will often climb to a considerable height to get their water from a fountain head, rather than take it from a conduit or pipe.

One of our chief purposes in visiting the Nusairy chain was to investigate the great trap dyke which overlies its southern spurs. The chain north of *el-Bireh* is composed of limestone similar to that of Lebanon. At the latitude of Qal'at-el-Musyáf there is no trace of trap rock overlying the limestone. At the latitude of *el-Bustán* there is a ridge which branches off from the main chain, trending to the south-west. This ridge encloses between itself and the main chain *el-Bireh* and *'Ain-Shems*. It is on the top of this ridge that the trap rock first appears. A Nusairy

shrine, Nebi Matta, crowns the summit above el-Bîreh. Its walls are built of trap, and its roof covered with limestone slabs brought from el-Bîreh. Just south of Shumeiseh the main chain turns toward the south-west, the limestone continuing to a point a few miles south of el-Meshta, where it is capped by trap. This bend to the south-west leaves a bay between the mountain mass at Shumeiseh, and a similar one a few miles to the south, which is the northern end of a ridge of trap trending south by east to the Buqe'ah. This ridge bounds the upper valley of the Nahr-el-Kebîr to the east. Between the main ridge and the upper valley of the Nahr-el-Kebîr is a series of ridges radiating in a fan shape, all capped at their southern ends by trap. The ridge opposite the southern end of the Nusairy chain, on which the Qal'at-el-Ḥuṣn stands, is composed of trap at its eastern, and limestone at its western, ends. At the bottom of the valleys, especially that between the Ḥuṣn range and the Nusairy chain, the limestone underlies the trap, and occasionally crops out in islands and headlands. The trap crosses the Buqe'ah and abuts against the northern spurs of Lebanon.

On either side of the Nusairy chain, from the latitude of el-Bîreh to the southern end of the chain, the trap is found. To the east it extends to the Orontes, but not across it. To the west it extends well out toward the sea. The accompanying sketch map gives approximately the limits of this great dyke. It is about 60 miles long, and almost as broad, and in many places 1,500 feet thick. I did not succeed in finding any crater, or determining the point of eruption.

On arriving at el-Bîreh, which is four-and-a-half hours from el-Musyâf, we asked for the sheikh. We were directed to the threshing-floors where most of the men were at work under two inspectors, who represent the *multazim*, or tax farmer. These inspectors invited us to a seat in their booth of leaves. We preferred, however, to ascend the mountain behind the village, which we found to be composed of basalt and lava. The barometer at the top at noon read 26·82, showing a height of 3,585 feet. The thickness of the trap at this point is therefore 835 feet. A fine view is obtained from Nebi Matta over the foot-hills, the great plain, and the sea. The top of the mountain is covered with bracken, *Pteris aquilina*, L. There are springs almost at the summit. Nearly the whole of the northern part of the range can be seen from Nebi Matta, owing to the fact that it is situated on a branch ridge, at some distance to the west of the main chain.

After spending half an hour on the summit we came down to the booth and partook of a lunch of squash and cracked wheat stewed in lebben. Our train had not yet appeared, having, as it subsequently transpired, met with many detentions and some mishaps in getting up the steep and rugged roads. In fact the limestone ranges are far more rugged than those of most of Lebanon and Anti-Lebanon, and wholly impassable except along the roads, which are none of the best. After waiting a couple of hours at el-Bîreh, we left word for our train to follow us to el-Meshta, where we proposed to spend Sunday. Three-quarters of an hour.



Sketch-map showing the relative positions of the trap and limestone of the southern Nusairiyah chain, and the Hems plateau, and Plain of 'Akkar.

||| Limestone.      \*\*\* Trap.

Stanford's Geograph. Establ.

from el-Bîreh we passed 'Ain-Shems, and then turning sharply to the left skirted a hill for five minutes, and then turned sharply to the right and over the hill. Thirty minutes more brought us to *el-Bastrah*, and fifty more to *el-Jenaineh*. From this village we made a plunge of ten minutes into the valley. Several mountain nymphs were bathing in the cold stream which flowed from the copious fountain by the roadside. Another ascent of ten minutes brought us to the Greek-Christian village of *el-Meshta*, or more fully, *Meshta-Beit-el-Helu* (i.e., the winter quarters of the Helu family). We were received with characteristic Oriental hospitality.

Between el-Bîreh and 'Ain-Shems we found *Rubus caesius*, L. (new for Syria). The distance from el-Bîreh to el-Meshta was two-and-a-half hours. The barometer at el-Meshta at 4½ p.m. read 28.5, height, 1,850 feet. Our train did not arrive until sunset.

*Sunday, August 3.*—By invitation of our host we held divine service in the morning under a fine plane tree, in the open plaza before the house. Two of the Greek priests were present at the service. Most of the day was spent in attendance on the sick, many of whom flocked in from the villages around. As the house is a specimen of many mansions of country squires, it may be well to describe it.

In the centre is a large quadrangular court open to the sky, the floor sloping from the upper end (where there is a plashing jet of cold mountain water playing into a limestone basin 6 feet in diameter) to the lower, where is the entrance through a passage leading out to the plaza. All around this court are square chambers, with floors of beton, ceilings of unpainted wood, and rude mulberry doors and windows, the latter unglazed. A flock of ducks, turkeys, and fowls, go at their pleasure through the muddy court, intrude into the rooms, or stray outside. The roofs of the chambers are flat, earth terraces, rolled in wet weather, to make the earth compact enough to shed rain. On either side of the vaulted entrance are stables and offices. Under the plane tree and around the plaza are divans of stone and wood, and on one side a large tank, in which quacking ducks and shouting boys dispute the enjoyment of the water. The whole village consists of the houses of the family or those of their tenants, and all the surrounding hills and valleys are the domain of the still wealthy, though reduced, family of el-Helu.

*Monday, August 4.*—It was with a sentiment of regret that we left the hospitable friends with whom we had passed two pleasant days. As we went out of the village Mr. Day took the dip of the limestone strata, 17° W. Our road lay at first due east, over the rugged limestone ridge.

Half an hour from el-Meshta we passed through the village of *el-Uyân*, and half an hour farther on through *el-Juweikhât*. On our way we collected *Teucrium Creticum*, L., and *Salvia grandiflora*, Etl. We passed through scrubs of *Quercus coccifera*, L., and *Pistacia Palaestina*, Boiss., but no forests. El-Juweikhât is a most picturesque village, built on three hills facing each other, and surmounted with rugged eminences dotted

over with scrubs and bushes. From el-Juweikhât we turned eastward and descended by easy grades to *Arq-el-Remthah*, a fertile valley through the last of the limestone ridges. Half an hour from el-Juweikhât we came upon a noble oak grove, overshadowing a Nusairy tomb. We stopped for a few minutes to rest in the welcome shade, and then rode westward up the easy slope of the north and south trap range. At the base of it we found *Johrenia juncea*, Boiss., a plant heretofore found only on the flanks of Hermon. The almost leafless stems are as high as a man on horseback. A rosette of much dissected leaves is found during the flowering stage at the neck of the plant. As soon as we had breasted the ascent we obtained an extensive view of the southern end of the range. The ridge on which we were overlooks the upper valley of the Nahr-el-Kebîr, and is *vis-à-vis* with another parallel ridge of trap, which is in the direct north and south line of the Nusairy chain. We followed up the ridge to its northern extremity, which is also its highest point. Unfortunately, we neglected to take the reading of the barometer there. But it cannot be lower than el-Bîreh. From this commanding point of view, overlooking the bay south of Shumeiseh, which divides the trap from the limestone, the sketch map of the southern end of the plain was made. All the ridges given in the map are in plain view from this point, as they could not be from any other. The opposite ridge to the east, however, cut off the view of the Orontes table-land.

On the top of the ridge we collected *Papaver Syriacum*, Boiss. After sketching the map we turned southward, and passing through a Nusairy village, of which we did not take the name, made our way down into the valley of the Nahr-el-Kebîr. In an oak grove half way down we found *Herniaria glabra*, L. and *Lupinus pilosus*, L. We took our lunch on the threshing-floor of *el-Kaimeh*, overlooking the valley.

At 3 p.m. we had reached the bottom of the valley. There we met with a grove of *Quercus Lusitanica*, Lam. The Nahr-el-Kebîr makes a long sweep around the shoulder of the range on which Qal'at-el-Ḥuṣn is situated, and then flows away to the west toward the sea. The Ḥuṣn range trends east and west, parallel to the southern escarpment of the Nusairy chain, and separated from it by the valley in which the convent of Mar Giurgius is built. Here and there in this valley the limestone rock crops out, and the western part of the chain of el-Ḥuṣn is also limestone. But el-Ḥuṣn itself is built on volcanic rock. We rode up to it at 4 p.m. The barometer stood at 28 ; height, 2,325 feet. From el-Ḥuṣn we rode down to the convent of Mar Giurgius, and then back again over the Ḥuṣn ridge, through the village of 'Amâr to Tell Kelakh, which we reached at 8 p.m. We collected on the way *Teucrium procerum*, Boiss., *Hippomarathrum crispum*, Pers., *Johrenia juncea*, Boiss.

Tel Kelakh is a village belonging to a wealthy family, at the head of which is Asaad Pacha, whose house is twenty minutes east of the village. It is the half-way station of the Tripoli-Ḥems Chaussée. The Pacha is a former patient of the writer and a warm friend. He was unfortunately absent at the time of our visit. Nevertheless, his relatives



showed us hospitality in his behalf by inviting us to supper with them, and by supplying all our troop with barley without charge.

*Tuesday, August 5.*—After posting a letter at the station we took up our route near the chaussée, which follows very nearly the old Roman road. We crossed the Nahr-el-Kebîr by the Jisr Sheikh 'Ayyash, called also *Jisr-el-Jidd*, and then skirted the 'Akkâr plain, passing through *Derîn* and *Quneitrah* to *Halbeh*, the seat of government, for the plain of 'Akkâr. The southern end of the great trap dyke is near *Halbeh*, and its western border loses itself gradually in the maritime plain.

Our way from *Halbeh* led us for an hour over the new carriage road to Tripoli, through 'Arqa and past Khan-el-Qulei'ât. A sharp turn to the left, and an ascent of an hour into the limestone foothills, brought us at 5½ p.m. to Bibnîn, a flourishing village, inhabited by a mixed population of Mohammedans and Christians. During the whole of this day we found little of botanical interest. The figtrees of Bibnîn are remarkable for their symmetrical growth and large size, and the figs rival those of Smyrna.

(To be continued in April "Quarterly Statement.")

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## ON THE STRENGTH OR PRESSURE OF THE WIND AT SARONA, RECORDED DAILY BY HERR DREHER IN THE TEN YEARS 1880 TO 1889.

By JAMES GLAISHER, F.R.S.

THE strength of the wind has been estimated on the scale of 0 to 6, a calm being represented by 0, and a gale by 6. On such a scale the square of the estimated numbers corresponds approximately to pounds pressure on the square foot: for instance, if the estimated strength be 1, 2, or 3, the corresponding pressure of the wind on the square foot are approximately 1 lb., 4 lbs., or 9 lbs. respectively. The numbering of the tables is in continuation of those on the direction of the wind in the same years, published in the *Quarterly Statement* in the number for July 1892.