

by putting wheat into the gourds. Since that time nobody ought to pray for rain or for fair weather.

Question 35. *Give legends about Nebys and Welys, &c.*—In all wars against the Christians, the Welys are supposed to war against the infidels. The mare of Sheikh Ibrahim abu Rubaah, of Jaffa, was absent one day from the stable. His son came running, telling him the mare was stolen. But the old sheikh shook his head and told his son to be quiet, the mare would appear again. Three days afterwards the animal was found tied to a tree near Yazür. On inquiry the father revealed to them that the mare had been warring against the Russians (this was in 1877). Many of the people of the plain saw falcons (they were disguised Welys) swallowing the Russian bullets as they were projected from the guns. There were many Welys fighting against the Russians. A Derwish in Safed used to bring felt hats, and said he got them every night in war with the Russians, but on further inquiry it was found he had taken them from the Jews in Tiberias. 'Omar-Ibu-Khattah appeared several times to the people of Urtas, like all such holy men, riding on a white mare with a spear, a green mantle and turban, and long white beard. They generally appear to rebuke the people for ploughing in their lands (the Wely's). The 'Ajami of Beit Mahsir, whose lands were mixed with the village lands, killed several animals which were on his lands. The people thought it was enemies who did it, and one evening they hid themselves, and saw the rider, as above described. He asked them what they wanted, and they told him: "If thou art the 'Ajami, show us thy lands." The next morning he had shown them by a boundary line all round his lands, and since then nobody interferes with his grounds. A camel which was feeding on an olive tree was found hanged between its branches; and at another time a jackal was found standing dead with a candle in its mouth at the door of the Makam. Thus the 'Ajami punishes man and beast for going on, or taking anything from, his grounds. Legends of Welys are very plentiful.

NARRATIVE OF AN EXPEDITION TO LEBANON, ANTI-LEBANON AND DAMASCUS.

By Rev. GEORGE E. POST, M.A., M.D., F.L.S.

THE only elaborate map of Lebanon, Coelesyria, and Hermon which we possess is the Carte du Liban du Corps Expeditionnaire de Syrie, published in 1860-1861. This map is far from correct in its topography, and very erroneous in its transliteration of Arabic names—the part of the Anti-Libanus which it covers is so incorrect as to be almost useless. The journey of which the present is a narrative was undertaken by Professor West and myself with a view to collecting the data necessary for making

a correct map of both chains, to be continuous in scale and style of execution with the map of the Palestine Exploration Fund, as well as for the further exploration of the botany and geology of these most interesting chains.

Professor West commenced his work from Qarnat'-Aqurah, a most commanding peak overlooking a large part of the rugged spurs of the maritime face of Lebanon, between the latitude of Beirut and Tripoli. He took bearings from this point of all the peaks to be seen. He then pursued his journey through the wildest part of the Jurd'-Aqurah to the Cedars, taking observations as he went. From the Cedars he ascended the highest regions of Lebanon, and took an elaborate series of angles from all the principal summits as far as el-Qarnet-es-Sauda. He then came over the top through the Wadi-en-Najâs to Sir, in the Dünnyeh, where the writer joined him on the 20th of July.

The road from Tripoli to Sir passes through the gap between Jebel-Turbul and Lebanon, then over a spur covered with scrubs of oak, arbutus, myrtle, juniper, and maple, into a grand amphitheatre, the background of which is the cliff called Rijl-el Qal'ah, which towers over the Neba'-es-Sikkar (the Sugar Fountain).

Tuesday, July 21.—We made our arrangements to spend two nights and two days at Merj-Hin, in the heart of northern Lebanon. Our road lay up through the village to the base of the cliff, along which we rode for two hours to Neba'-es-Sikkar, a fine fountain at the base of the highest portion of the cliff, which can hardly be less than 1,200 feet high. The temperature of the water of this fountain is 42° F. Its sparkling waters flow in a series of cascades and rapids 4,000 feet into the ravine below.

From Neba'-es-Sikkar we passed over an easy road, for an hour and a half, to Sikr-Ibrîsah, where is a spring of cool water and a small meadow.

The day before, Professor West had found large numbers of cedars at the head of the Wadi-en-Najâs, above Sir, at a height of about 6,000 feet. We found them in considerable numbers between Sir and Neba'-es-Sikkar, and I afterwards found them in the forest toward Wadi-Jehennam. I did not find them in the upper regions of the 'Akkar forest below the Jebel-el-Abiad. The people of these parts call them Tanûb [تنوب].

Thus within a small area the cedar has three names, the Arz, its proper designation, the Ibhûl, name near Barûk and el-Ma'âsir, and the Tanûb, in the Dünnyeh and 'Akkar.

Passing over a shoulder to the right, we saw spread out about 800 feet below us the broad fertile plain of Merj-Hin, about four miles long, by half to three quarters of a mile broad. At either end of this plain is a copious fountain; the temperature of Râs-el-'Ain, the southern fountain, which is much the larger of the two, is 49° F. That of 'Ain-el-Jami', the northern fountain, is somewhat higher.

All the afternoon we were passing along the flank of Lebanon, at an altitude of from 4,000 to 5,000 feet above the sea. Below us lay the grand forest region of the Dünnyeh. It consists of an intricate series of

the most rugged gorges, belonging to the upper waters of the Nahr-el-Bârid. The almost perpendicular sides of these gorges are clothed to their rocky tops with large trees. The most characteristic of the trees of the Dunniyeh, from 4,500 to 6,500 feet, is *Abies Cilicica* [شجرة], of the shape and mode of growth of which the subjoined cut, taken from a photograph, give an excellent idea.



ABIES CILICIA.

This tree grows to a height of 60 feet, and in the denser forest region its comus is cylindrical. In the more open groves it is elongated-conical, as in the cut. The cones are cylindrical, and about five to six inches long, and one and a quarter to one and a half broad. The following cut shows the shape of the top of one of these trees with its erect cones.

In a wheat field, a few hundred feet to the right of the road, half an hour before reaching el-Merj-et-Tawîl, I found *Chærophyllum Aurantiacum*,

Post, a new species, and in the woods to the left, *Ribes Orientale*, Poir., the wild currant of Lebanon.

From 5,000 to 6,500 feet grows the cedar of Lebanon. From 3,500 to 8,800 feet the sturdy *Juniperus excelsa*, the *Lizzâb* of the Arabs, defies alike the rigor of the elements and the stupid vandalism of man. It is safe to say that there is not a single perfect tree of this species in the whole of northern Lebanon and Anti-Lebanon, perhaps nowhere in Syria. Instead of cutting down a tree and splitting it up for fuel or charcoal, the



TOP OF *ABIES CILICIA*, SHOWING CONES.

woodmen hack and lop the branches and mutilate the trees into most shapeless forms, often cut deeply into their base, with no apparent object save destruction, bark the trunk, set fire to single trees, often to whole forests. The lopped trunks are twisted, gnarled, scathed, peeled, often assuming forms of Laocoönic agony. Nevertheless, neither the lightning bolt, the incendiary torch, nor the ruthless axe have as yet been able to extirpate this tree of iron constitution. It grows far above the snow-line. Forests of dead, mutilated trees cover whole mountain sides. In many

instances a single branch is doing its best to maintain the life of the tree by putting forth a bunch of twigs, until some wanton woodman, apparently out of mere spite, lops it off, and extinguishes the last spark of life. Yet these gaunt dead forests do not rot, and their skeletons cover the mountains, a sad reminder of the improvidence of the people which has desolated the ill-fated East.

At the levels below 5,000 feet, flourish the evergreen oak (*Quercus coccifera*), and a deciduous-leaved species (*Q. Cerris*). From 2,000 to 6,000 feet, *Prunus ursina* (*kharkh-ed-Dib*), and *Juniperus oxycedrus* (*Abu-Kuleil* and *Abu-Lauz*). Below 4,000 feet, *Pistacia Terebinthus* (*Butm*) and *Pinus Haleppensis* (*Snebar* and *Ibhul*). Of shrubs, often with the magnitude of trees, we have *Lonicera nummularifolia*, *Styrax officinale*, *Berberis Cretica*, *Cotoneaster nummularia*, *Crataegus monogyna*, and *Ribes Orientalis*, and others.

Arrived at Merj-Hin we encamped on a gravelly bank, about 50 feet above the northern fountain.

Horses are a fundamental consideration in an oriental journey. Their mishaps and infirmities do much to impede and thwart the best laid plans. Professor West's fine charger died suddenly the day before he had intended to start, and so, besides the loss of a valuable animal, put back his journey three days. Another horse gave out at Sir, and had to be traded off for a very inferior animal, with a bonus to boot.

Half an hour after leaving Neba'-es-Sikkar, another horse overreached and went lame. A little farther on he tore off one of his shoes, and went still more lame. With great difficulty we had him led to our camp at Merj-Hin, in the hope that a rest of two nights and a day there would make all right. But he grew no better, and, on the third morning, we were obliged to send him back to his owner at Tripoli.

Wednesday, July 22.—At 8 a.m., after a cold night, we started up the Wadi-es-Şifşaf, toward the northernmost peak of the Zohr-el-Qodib, which is known as Rijâl-el-'asherah. The Wadi-es-Şifşaf (Valley of the Willow), owes its name to a few willows on the shelving hillside, halfway up the valley on the left side of the road, going up. The trend of the valley is W.S.W. Just below the willows we found *Tragopogon buphtalmoides*, *Boiss. var. humile*, Boiss. At a height of 6,750 feet, in a basin of the same excavation as Wadi-es-Şifşaf, but without an outlet, we came upon Merj-Buşwayeh, a meadow about half-a-mile long and a quarter wide, in the middle of which is a shallow pool of water fed by a perennial spring; 250 feet above this meadow, on the right slope of the valley, is the ruined village of Buşwayeh, the highest ruin of dwelling houses in Lebanon or Anti-Lebanon. A description of this ruin, with plans of a rock-hewn tomb and a cover of a sarcophagus, was given in the *Quarterly Statement* for October, 1891.

An hour and a half from Buşwayeh we reached the twin mamillary projections of Rijâl-el-'asherah, 9,500 feet above the sea. After taking our observations of altitude, and angles for cartographic purposes, we lunched by a snowdrift, in the shadow of the rocks, at the base of which

was a pool of water. We tested the temperature of the water in the small pools just below the drift, and found it 43° F., one degree higher than that of the Neba'-es-Sikkar. The view from this point is very fine, especially to the north, where it takes in the whole valley of the Orontes and the Hems plateau, with the distant ranges of the Jebel-el-Báridi and Jebel-Bil'as. It overlooks also a large part of the rugged forest region of the Dúnnyiyeh and 'Akkar, and the Jebel-el-abiaq, the last outlier of the Lebanon chain.

From Rijál-el-'asherah we rode to the shoulder overlooking Sikr-Ibríssah. On the face of the cliff overlooking Wadi-'Ain-el-beida I found a *Juniperus excelsa* at an altitude of 8,800 feet. This is the highest station at which I have observed this hardy tree. In the gravel at the top I found *Allium Makmelianum*, Post, a very pretty new species; also *Erysimum Libanoticum*, Post, another new species; also *Æthionema oppositifolium*, Labill., *Euphorbia caudiculosa*, Boiss., and *Autrania pulchella*, Winkler et Barbey, a plant of a new genus, named after Monsieur Eugène Autran, the modest but indefatigable curator of the Herbier Boissier, at Geneva. Full drawings of this species, exhibiting the minutest details of its structure, are given in *Fasc. IV, Plantæ Postianæ*. In addition to the above we found among the rocks a specimen of *Podanthus virgatum*, Labill., as usual much eaten by the goats, and specimens of *Festuca ovina*, L., 2 *pinifolia*, Hackel, and another species of *Festuca*.

From this shoulder is gained the best view of the sombre Wadi Jehennam, and its branch valleys. Mr. Crawford discharged his shotgun on this summit. The unwanted sound disturbed a distant encampment of Arabs, and it was amusing to watch the shepherds gathering in from all sides as if a signal gun had been fired, and they must be ready for a fight. We concluded, before giving them the meaning of our shot, to plunge down the steep side of the mountain to the Wadi-'Ain-el-beida. We led our horses down the gravelly slope, and then rode up to the 'Ain-el-beida, past Bušwayeh, and then by a short cut over to our camp at Merj-Hín.

Thursday, July 23.—I accompanied the groom who was leading the lame horse back to Tripoli, past some Arab encampments, at el-Merj-et-Tawil, and then struck across the upper forest region to el-Jebel-el-abiaq which I ascended. The view from the southern peak is very fine. I had not time to go to the northern, from which a view in perspective can be obtained of the Nusairy chain. Professor West conducted the rest of the party to el-Funeidiq, a village 3,800 feet above the sea, on the lower ranges of the 'Akkár mountains. I struck across the lizzab and spruce forests to the same point.

Friday, July 24.—Funeidiq and Mishmish are twin villages, inhabited by a very ignorant and fanatical population. We were not sorry to leave their neighbourhood. On our way eastward, Professor West ascended el-Jebel-el-abiaq, and took observations of height and bearings on several points of cartographical importance. The height of the highest peak by

his measurements was 7,200 feet. I struck across the spruce forest, and we photographed the trees above delineated. We had all appointed to meet at the 'Ain-el-Jamī' for lunch. The two parties arrived within five minutes of each other.

We took our lunch under a lizzāb tree, on the slope, north-east of Merj-Hin. The view over the Merj and the great mountain mass was extremely fine. The meadow was dotted all over with flocks and herds, and formed a charming contrast to the sober grey of the hills.

There are several ruins in the hills about Merj-Hin. One is called Kharbet-Jamī'. It consists of the remains of a comparatively modern village of rounded, unhewn stones, and is only of interest as indicating a recent occupancy. On the flank of the left side of the Merj, going north, about two-thirds of the distance from the southern end, a fellah told me that there was a spot called Ard-el-Hima [أرض الهمى], or Shir-es-Siwān [شير الصيوان], where there is some masonry, and an old conduit. I did not see them. He also told me that in the eastern mountain mass, that shuts in the Merj, was an ancient ruin, called Kharab-el-Hātim [خراب الحاتم], with hewn stone and sculpture.

Also another small ruin called Qarnet-er-Ruweis [قرنة الرويس]. I did not find time to visit any of these ruins.

After lunch we passed the divide between Merj-Hin and Coelesyria. Our way lay at first through wadies between rolling hills, covered with phantom lizzāb forests. Among these wadies we encountered several groups of charcoal burners, and one kiln, where the woodmen were extracting tar from the wood of the *Juniperus oxycedrus*, called by them *Abu-Jauz* [أبو جوز]. After an hour of this scenery we turned to the right over a shoulder, and then into a beautiful park-like wadi, Wadi-Ibrisah, opening out N.N.E. to the Coelesyria and Hems plateaus. Immediately the Flora changed, and the plants of Coelesyria and Anti-Lebanon plateaus replaced those of Lebanon. *Pimpinella corymbosa*, Boiss., *Postia lanuginosus*, Boiss. (new for Lebanon), at a height of 3,200 feet, *Jurinea Stehelinæ*, D.C., *Verbascum Aliciae*, Post (a new species), and a dozen other species not found on the maritime face of Lebanon. The trees of this region grow in open, park-like order, and are mostly young, and not hacked and hewn as those of the upper slopes. I noted *Juniperus oxycedrus*, L., *J. excelsa*, M.B., *Quercus coccifera*, L., *Q. Cerris*, L., *Pistacia Terebinthus*, L., *Acer Monspessulanum*, Boiss., *Prunus ursina*, Koch, *Lonicera nummularifolia*, J. et Sp., *Phillyrea media*, L., *Cotoneaster nummularia*, F. et M., *Berberis Cretica*, L.

Through the spreading gates of the valley we could see the boundless plain, now scorched by the heat of the midsummer's sun. Through the middle of the foreground the green line of the Orontes could be traced past Riblah, where Nebuchadnezzar put out Zedekiah's eyes, obliquely across the Plain of Coelesyria, to near Quseir, then back again to the Lake of

Hems. Except along the river, and where the irrigated gardens of the towns relieve the eye, all is sterile and forbidding at this season. The range of Anti-Lebanon, although broken in outline at this point, is of a uniform dun colour, unrelieved even by the scrubs which mitigate the barrenness of the slopes of Lebanon. We afterwards found trees in the wadies and the interior mountains, as will be seen in due course.

Turning round the shoulder at the right side of the valley, we passed for half an hour across a stony spur to el-Hurmul. This village is supplied by a number of fountains, the principal of which is Ras-el-Mâl, the water of which is carried by an aqueduct round the village, and distributed through it and the adjacent gardens far out on the plain. We encamped near the aqueduct, south of the village. The water at the fountain had a temperature of 52° F.

Saturday, July 25.—We left el-Hurmul at a quarter before 8 a.m. for the fountain of the Orontes, about an hour and a half away. The road was stony and uninteresting, and the descent to the fountain unspeakable. A turbid stream, Neba'-el-Fîkeh, having its rise on the opposite side of the plain, rushes down into the cleft of the upper fountain. The upper fountain itself breaks out, not from the mountain side of the gorge, as might have been expected, but on the side of the plain. It consists of a semi-circular basin, with walls only a few feet higher than the river bed. Around this basin winds a road, on the inner edge of which grow a few plane trees and willows. The water gushes out of apertures in the rock between the roots of these trees into a pool some 20 feet in diameter, and flows away in a stream about 15 feet broad and 3 deep, for a distance of about 100 feet, where it joins the turbid stream aforementioned at a right angle. The volume of water from this fountain is sufficient to clarify the turbid water from the upper stream, and all flow together a mile or more past the convent of Mar Mârûn, a limpid river, which, however, soon gathers turbidity from the clayey soil, and pours a whitish stream down to the sea at Seleucia, a few miles below Antioch. The temperature of the water at this fountain is 57½° F.

The Qamu'-el-Hurmul, which looms up opposite el-Hurmul, in the middle of the plain, now lay far to the north, and we decided not to go back to visit it. The site is well chosen on the highest ground in the plain, and the monument can be seen in all directions. It has been so often described and figured that it need not detain us any longer.

Crossing the plain without reference to roads, which are always very sinuous in the East, we arrived at Râs-Ba'albek at noon. The rough work of the past week made necessary the services of the good farrier whom we found there. The half day also gave time to write up our journals, work up our calculations, and give attention to the preparations for our journey into the heart of Anti-Lebanon.

Sunday, July 26.—In the morning the Rev. J. Stewart Crawford, of Damascus, preached in Arabic to an audience which comfortably filled

he schoolroom. He took for his theme the story of Naaman the Syrian. The rest of the day was passed in quiet rest.

Monday, July 27.—Our way lay through Wadi Taniyyat-er-Râs, by a road with a grade easy enough for a carriage. The word Taniyyat is a corruption of Thenfîyyat [تنية], which means a fold. It is an appellation of a number of wadies in this part of Anti-Lebanon. In this wadi, a few hundred yards above the village, is the convent of es-Sayyidat-el-Halabiyyah, one of three convents of this order in Syria. The other two are in Lebanon. It is in a ruinous condition, and maintained by only three monks, whose principal business is to look after the property of the Order, which is considerable in these parts. Some hundreds of yards further up the wadi makes a sharp turn to the left, and at this point a cliff, perhaps 400 feet high, frowns over the valley. Just below its summit is a cave called Magharat-Mar-Niqûla. Our guide told us that there is a spring of sweet cold water in this elevated cave.

In the fields above the convent we found *Cleome ornithopodooides*, L., not before noted south of 'Aintâb. We rode for an hour up this valley. Clumps of *Atraphaxis Billardieri*, Jaub. et Sp., at this season covered with its beautiful pink and white scarious fruits, brightened the roadside. Above the head of the valley is a broad plain. Here I found *Johrenia Westii*, Post, a new species, *J. fungosa*, Boiss., *Cephalaria stellipilis*, Boiss., and *Hippomarathrum*, Boissieri, Reut. et Haussk. Halimat-Qobu thrusts up its grand head above the farther end of this plain. Here our party divided, a portion taking the direct road to the peak, while I followed the Qâra road through the Wadi Sureijat-ed-Dib, to a point two hours short of Qâra. In this way I rounded the northern outlier of the Halimat-Qobu, which is a truncated cone, 7,000 feet high, called Halimat-Qobr-Isma'in. I ascended this peak by a stiff climb, and obtained a fine view of the southern Halaîm, as well as of Halimat-Qobu, just opposite. The word Halimat is a corruption of Huleimat [حليمة], the diminutive of Hâlâmât, which signifies a nipple. It corresponds to *mamillary peak*. It is only used in the neighbourhood of northern Anti-Lebanon, where indeed are almost the only peaks to which, by their conical form, it would be applicable. All the peaks north of Wadi Khashshâbel are more or less conical, and so in marked contrast with the gigantic whalebacks of the rest of the Anti-Lebanon chain, and of most of Lebanon.

Descending from this peak by a steep decline of six or seven hundred feet, to the divide between Wadi Za'rûr and Wadi el-Mireh, I found a solitary tree of *Amygdalus communis*, L., loaded with ripe almonds, of the usual shape, but no larger than cherries. The taste of the kernel resembled that of a peach-stone. Some 200 yards beyond is the 'Ain-el-Qobu, all the surroundings of which have been fairly described by Burton. Under a lizzâb tree above the fountain I found my associates. After lunching we ascended to the summit by a comparatively easy path. The characteristic vegetation of the cone consists of *Cousinia Dayi*, Post (a

plant which abounds on all the Halaïm, and in all the intervening valleys, and on the 'Asal-el-Ward plateau), *Ballota Antilibanotica*, Post (a plant peculiar to the northern Anti-Lebanon, growing quite to the summit of the Halaïm), *Acantholimon Libanoticum*, Boiss., *A. Armenum*, Boiss. et Huet, *Pyrethrum densum*, Lab., *Euphorbia tinctoria*, L., *Onobrychis cornuta*, Boiss., *Stipa sp.*, *Scabiosa Ukranica*, L. Scattered lizzâb trees grow nearly to the summit, which is 8,090 feet above the sea. The view from Halimat-Qobu is very extensive. It includes all the mountain systems of the Syrian Desert, the Nebk plateau, with its green oases in the midst of a parched brown desert. Far to the north-east Qaryetein can be seen, nestled in its green gardens. The range of Lebanon, from the northernmost spur of el-Jebel-el-abiad to Jebel Keniseh, is in full view. The angles taken by Professor West from this point will go far toward settling the topography of the map of the two ranges. After an hour spent in taking observation, photographs, and enjoying the superb view, we came down to our camp near 'Ain-el-Qobu.

Tuesday, July 28.—Leaving our equipage to go by the road to Jureijir, Professor West and I wound around the northern and eastern face of Halimat-Qobu, crossed Wadi Mar-Tubiyah, and climbed Sudr-esh-Sheikh-'Ali, which is 7,000 feet above the sea. On its bleak summit I found *Alyssum alpestre*, L., var. *minutiflorum*, Boiss., *Papaver Libanoticum*, Boiss., *Pyrethrum densum*, Lab., *Jurinea Stoebeliae*, D.C., *Teucrium Polium*, L., *Astragalus exiguus*, Post (a new species).

Opposite to Sudr-esh-Sheikh-'Ali, separated from it by Wadi el-Mâl, is the twin peak of Sudr-Wadi el-Mal, or Halimat-Qureis. We climbed it also, and found the height 7,800 feet. On the rocks near its southern end I found *Dianthus Haussknechtii*, Boiss., which I had found last year on the top of Jebel Barûk. It had not been previously noted south of the mountains of Asia Minor. These twin peaks, with Halimat-Qobu, form a mass also known as Halimat-Qâra.

Descending from this peak by its western flank to Weshel-el-Qureis (the trickling fountain of the nettle), we lunched under a lizzâb tree just above this cool fountain, 7,000 feet above the sea. It is one of the most elevated springs in the mountains of Syria. 'Ain-el-beida, above Buşwayeh, is about the same height.

We tried almost in vain to obtain information from the goatherds in regard to the peaks, valleys and springs of the mountains. It is a belief firmly fastened in their minds that foreigners visit these mountains to search for hidden treasure, the clue to which is recorded in their books. They believe that we know the names of the natural features of the country from our books and maps, and that all we need is to have the places pointed out to us to enable us to dig successfully for the coveted treasure. Accordingly they refuse to impart information, lest we should find wealth which they hope to unearth for themselves. Often they dig in places which they have seen us visit and search in vain for the much-desired gold.

Above and around the fountain is a large number of boulders which

have rolled down from the mountain. On the opposite sunny slope, two



PROFILE OF THE HALAIM.

1. Wādi Khurbet.
2. Sudr Wairid.
3. Wādi Zammarāni.
4. Halimat Zammarāni.
5. Wādi Barad.
6. Halimat Qurrais.
7. Halimat Qārah or Sudr Sheikh 'Ali.
8. Wādi Sheikh 'Ali.
9. Halimat Qabu.
10. Road to Buqā' from Jurejjr.

flocks of goats were awaiting their turn to be watered. They lay patiently

in the blazing mid-day sun, until their respective herdsmen gave them their signal, and then came in quite an orderly way to the drinking troughs. The care and accuracy with which the herdsmen see that every goat drinks as much as it needs is admirable. One kid did not seem thirsty. The herdsman held it between his legs, opened its mouth and thrust a tarred stick down its throat to excite thirst, and then put its nose into the trough and held it there until the animal began to drink. The herdsmen say that the goats will not drink oftener than once in a day, even if water be offered to them.

After leaving 'Ain-Weshel-el-Qureis we rounded the southern shoulder of Sudr-Wadi-el-Mal, and descended into the Nebk plateau by the Wadi el-Barad, reaching our camp at Jureijr at about 5 p.m. Wadi Barad changes its name after the watershed, and then becomes Wadi Farâh.

Jureijr is a forlorn village in a dusty plain without a single tree to relieve the surrounding barrenness. It has been in ruins for 150 years, and only reoccupied for about 10 years.

Wednesday, July 29.—After taking the accompanying profile of the Halaïm we rode on to Yebrûd, two hours away, and encamped in the meadow by the great fountain. On the way I had collected *Carthamus faveolans*, *W.*, and *Ankyropetalum Cælesyriacum*, *Boiss.*

At Yebrûd we met Dr. Adams and Messrs. Bucher and Walker, of the Syrian Protestant College, who were spending the summer there. The gardens of Yebrûd are quite charming, and the surrounding hills very picturesque in outline. On our camping ground I found *Centaurea Postii*, *Boiss.* (not heretofore found east of Anti-Lebanon, except by myself last year at Qaryetein), and in the clefts of the rocks above the meadow I found *Teucrium Socinianum*, *Boiss.*, *Reutera tenuis* *Boiss. et Haussk.* (not heretofore found south of eastern Asia Minor), *Galium canum*, *Reg.*, *Dianthus Libanotis*, *Labill.*, and in the shade of the rocks and in the tombs *Scolopendrium officinale*, *L.*, and *Adiantum Capillus-Veneris*, *L.*

Mr. Ibrahim Katibi, the accomplished teacher and preacher of the Irish mission in this town, gave me many valuable points in regard to the Arabic names of places on the map. The following list gives the present readings in Johnston's map of Palestine and the corrections in English transliteration and in Arabic letters:—

PRESENT READING.	CORRECTION.	ARABIC.
Hasyah	Ḩasyâ	حسّيَّاً
Hawarin	Ḩawwârîn	حُواَرِينَ
Karyetein	El-Qaryetein	القرىٰتين
Kustul	Qastâl	قَسْطَل
Karnat-el-Wayrik	Qarnat-el-Wâriq	قرْنَة الْوَارِق

PRESENT READING.	CORRECTION.	ARABIC.
Kara	Qârah	قارَد
Falitah	Fâlitâh	فليطَّة
Sahil	Es-Sîhîl	السِّحْل
Ma'arrat-el-Bash-Kurdi	Ma'arrat-el-Bash-Quryeh	معَرَّة البَاش قرية
Jebel-Nebi-Baruh	Jebel-Nebi-Barûh	جبل نبِي باروْح
Jebel-el-Baradah	Jebel-el-Bâridah	جبل الباردة
Kaldun	Qaldûn	قلدون
Kuteifah	Quṭeifa	قطيفَة
Akauber	'Akaubir	عَكُوبِر
Rankush	Rankâs	رنكوس
Ain Tiniah	'Ain-et-Tîneh	عين التينية
Telfita	Telfitah	تلْفِيَة
Ma'amurah	El-Mâ'mûrah	المعمورة
Wahabiyeh	Khirbet-el-Mûhibiyeh	خربة المُهَبِّيَة
Jebel Abu Ata	Jebel-Abul-'Atâ	جبل ابو العتا
Jebel'azra	Jebel-'Adhra	جبل عذراً
Duma	Dumah	دوامة
'Azra	'Adhra	عذراً
Helbon	Halbûn	حلبُون
Jayrud	Jarûd	جرود

In due time we hope to be able to give similar corrections for all the region covered by Johnston's map.

Thursday, July 30.—We rode in company with Mr. Katibi to Ma'arrat-el-Bash-Quryeh (usually written Bash-Kurdi), an hour and a half away. In the face of a cliff, some 60 feet high overlooking this village, is a large cave and numerous rock-hewn chambers similar to those in Ma'lulah, but

not inhabited. They are now used for the storage of goats' dung, which constitutes one of the sources of wealth in Ma'arrah.

From Ma'arrah we ascended by an easy valley to the base of Tal'at-Musa, an hour and a half from the village. In this valley I met with *Phaeopappus longispinus*, Post (common in the northern Anti-Lebanon valleys and the 'Asal-el-Ward plateau), *Scrophularia xanthoglossa*, Boiss., var. *decipiens*, Boiss., *Plumbago Europea*, L. (Arabice Khamisheh), *Euphorbia tinctoria*, L. (Arabice La'iyyah), *Cousinia Dayi*, Post, C. *Pestalozzae*, Boiss. (Arabice Shih-es-Sirr), *Jurinea Stachelineæ*, D.C. ? ? (Arabice Shih-el-Birkâ).

Tal'at-Mûsa consists of an amphitheatre of mountains opening out to the north-east. The eastern shoulder of this amphitheatre is formed by Jebel-er-Râs-er-Rafî'. We ascended this bold peak, from which, as it juts out beyond the general line of the chain, the view is especially comprehensive and useful for cartographic purposes. Professor West obtained many angles from this point. The height is 8,000 feet.

Descending a few hundred feet, and riding along a shoulder, we came to the base of the principal cone, up which we rode by a series of zigzags to the summit, 8,300 feet above the sea. The view is less impressive than that from er-Râs-er-Rafî', although the elevation is the greatest in the Anti-Lebanon, except Hermon. The most striking feature of the view from this peak is el-Khushsha'ah, a wilderness composed of a series of precipitous terraces rising one above another, and clothed with straggling lizzâb trees.

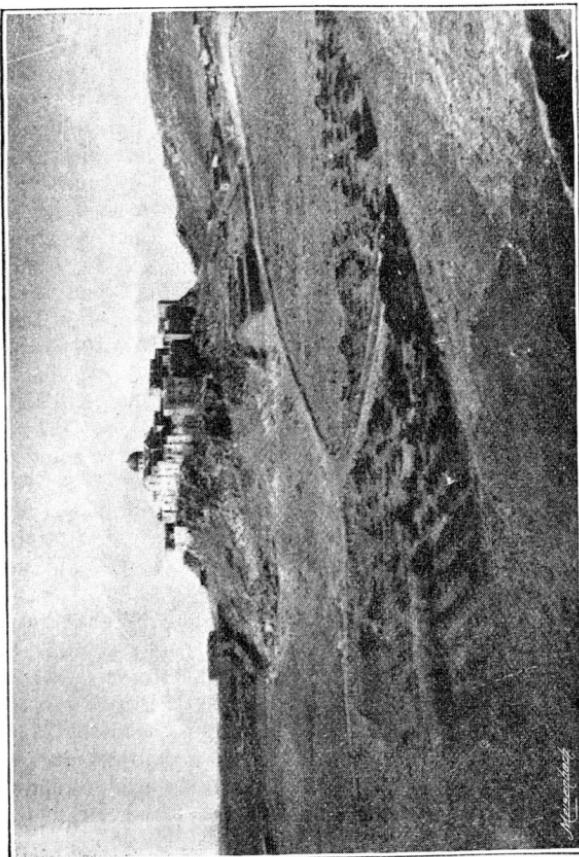
We measured by aneroid the central cone of the amphitheatre, and found it nearly the same as Jebel-Musa. The others are evidently lower. On this cone I again found *Dianthus Haussknechtii*, Boiss., also *Micromeria Libanotica*, Boiss., var. *major*, Post. As I returned I alarmed a bear which had been hiding under one of the lizzâb trees. It disappeared behind the rocks, and Mr. Crawford searched for it a quarter of an hour in vain. After enjoying for three hours the views from the summit we descended to Wadi-el-'Ayûn, and watered our parched horses by the fountain, 7,300 feet above the sea. We then returned by the way of Ma'arrah to our camp at Yebrûd.

Friday, July 31.—We left our turf camp at 8 a.m., and rode along the dry plateau for three hours to Jubbeh, a little village near the divide between the plain of Yebrûd and that of 'Asal-el-Ward. The flora of the plateau over which we passed consists, at this season, almost wholly of clumps of *Artemisia Herba-alba*, L., *Jurinea Stachelineæ*, D.C., and *Acantholimon Armenum*, Boiss. et Huet. In the table land of Jubbeh, I found *Dianthus Libanotis*, Labill., *Daucus pulcherrimus*, Onosma sericeum, Willd.

After lunching under a butm tree, near el-Jubbeh, we rode in an hour to 'Asâl-el-Ward, then in one and a half to Ras-el-'Ain, and in an hour more to Rankûs, just over the crest of the upper Qalamûn range. At the top of the pass between Râs-el-'Ain and Rankûs I found *Thymus Alfredæ*, Post, a pretty moss-like species, growing appressed to the rocks by the roadside. Rankûs is a dirty village, which does not even possess a

fountain. The water is supplied by cisterns, and we found it undrinkable. Fortunately we had brought a supply for the table from the cool fountain of Râs-el-'Ain. We pitched our camp on a breezy shoulder above the town at a convenient distance from its noise and filth.

Saturday, August 1.—I left at 6½ a.m. for Seidenayah. The road lay down the valley, then along the lower flank of the upper Qalamûr range



CONVENT AT SEIDENAYAH.

I took a view of the picturesque convent from the rocks opposite its north-west corner.

I then visited the convent. At the top of the isolated rock on which it is built are several hewn tombs. That at the northern end is quite large, and the receptacles for the bodies hewn into the floor of the cave. The present church and a large part of the walls are of recent construction (1870). The village is as dirty and uncivilized as most of those in these parts. The height of the village fountain is 4,400 feet.

From Seidenayah we crossed the plain to the opposite ridge, descended into a broad valley with numerous fig orchards, ascended a steep slope, and crossed the lower ridge of Jebel Qalamân. As we emerged from the gap at the crest, the wonderful view of the Damascus plain, backed by the distant hills of Bashan, burst upon our sight. After seeing the plain from all other points of approach I must pronounce this view the most impressive of the panoramas of Damascus and its environs. We reached the city at 4 p.m., in time to post letters by the evening coach to Beirut.

Having in this journey, and that of the previous summer, completed the study of almost the whole length of the chains of Lebanon and Anti-Lebanon, it may be well to compare the two.

They are alike in the fact that they are both limestone chains, with the exception of the south-eastern flanks of Hermon, which are volcanic. Lebanon, receiving, as it does, a far heavier rainfall than Anti-Lebanon, exhibits, especially on its western slopes, the phenomena of erosion by water on a far grander scale than Anti-Lebanon. There is a great contrast between the sublime gorges of the Nahr-el-Barid, in the Duniyeh, the Qadisha, the Nahr Ibrahim, Nahr el-Kelb, Nahr Beirût, the Awwali, and the Zaharâni, on the one hand, and the tame wadies of Tanniyat-er-Râs, Wadi-el-Mâl, Wadi-el-Barad, Wadi-el-Harîr, Wadi-el-Qarn, and the Hâsbâni valley on the other. Lebanon consists of one ridge, with the commanding peaks of Jebel 'Akkâr, Makmel, Sunnîn, Kentseh, and the long nave of Jebel Barûk, ending in the twin peaks of Tomat-Nîha. Anti-Lebanon consists of the giant ridge of Hermon at the south, from which no less than five ridges spread out in a fan shape. The interspaces of these ridges constitute a plateau 4,000 to 5,500 feet above the sea, from which the mountain ranges rise to a height of 7,000 to 8,400 feet. The northern end of the second series, commencing from the west, is composed of the more or less conical Halâim.

The flora of the two ranges differs considerably. That of Lebanon is more varied and numerous than that of the sister range. From the greater elevation of the peaks the alpine and arctic species are more numerous in Lebanon. A few highly characteristic species, however, are found among the Halâim, and on the elevated plateaus of Anti-Lebanon.

A day or two after our arrival in Damascus, Mr. Crawford and myself took a ride into the Ghautah, with the pleasing result of finding a new species, *Asperula Ghautensis*, Post. We also found fine specimens of *Senecio erraticus*, Bertol.

LIST OF PLANTS COLLECTED IN NORTHERN LEBANON,
ANTI-LEBANON AND DAMASCUS.

I.—PAPAVERACEÆ.

Papaver Libanoticum, Boiss. Sudr-esh-Sheikh-'Ali (Anti-Lebanon).

II.—BERBERIDACEÆ.

Berberis Cretica, L. Buşwayeh (Lebanon).

III.—CRUCIFERÆ.

Mathiola Damascena, Boiss. Wadi Barada (Damascus).

Alyssum alpestre, L., var. *minutiflorum*, Boiss. Sudr-esh-Sheikh-'Ali (Anti-Lebanon).

Arabis albida, Stev. Rijâl-el-'asherah (Lebanon).

Æthionema oppositifolium, Labill. Rijâl-el-'asherah (Lebanon).

Erysimum Libanoticum, Post., sp. nov. Between Rijâl-el-'asherah and el-Qal'ah (Lebanon).

IV.—CAPPARIDACEÆ.

Cleome ornithopodooides, L. Wadi Taniyyat-er-Râs (Anti-Lebanon).

V.—SILENEÆ.

Dianthus Haussknechtii, Boiss. Sudr Wadi-el-Mâl and Tal'at-Mûsa (Anti-Lebanon).

Dianthus Libanotis, Labill. Yebrûd.

Gypsophila hirsuta, Boiss. var. *alpina*, Boiss. Ascent to Rijâl-el-'asherah (Lebanon); var. *filicaulis*, Boiss. Wadi Ibrisah (Lebanon).

Ankyropetalum Colesyriacum, Boiss. Yebrûd Plateau.

Silene swertiaefolia, Boiss. var. *BREVIPES*, Post. Wadi el-Qarn (Anti-Lebanon).

Alsine rupestris, Labill. Ascent to Rijâl-el-'asherah (Lebanon).

„ *Libanotica*, Boiss. var. *papillosa*, Post, Rijâl-el-'asherah.

VI.—ZYGOPHYLLACEÆ.

Fagonia Olivieri, D.C. Ma'arrat-el-Bash-Quryeh (Anti-Lebanon).

VII.—RHAMNACEÆ.

Rhamnus punctata, Boiss. Wadi-el-Qarn (Anti-Lebanon).

VIII.—LEGUMINOSÆ.

- Ononis vaginalis*, Vahl. Seidanayeh (Anti-Lebanon).
Colutea arborescens, L. Wadi Ibrisah (Lebanon).
Astragalus hirsutissimus, D.C. Wadi Ibrisah (Lebanon).
 " *cruentiflorus*, Boiss. Ma'arrat-el-Bash-Quryah (Anti-Lebanon).
 " *EXIGUUS*, Post. Top of Sudr-esh-Sheikh-'Ali (Anti-Lebanon).
Alhagi Camelorum, Fisch. El-Ghautah (Damascus).

IX.—ROSACEÆ.

- Amygdalus communis*, L. 'Ain-el-Qobu (Anti-Lebanon).
Cerasus Antilibanotica, Post. Wadi-el-Qarn (Anti-Lebanon).
Prunus ursina, L. Dunnîyeh (Lebanon).
Potentilla Libanotica, Boiss. Sir (Lebanon).
Rosa canina, L. Wadi-el-Qarn (Anti-Lebanon).
Cotoneaster nummularia, F. et M. Mishmish (Lebanon). 'Ain-el-Qobu (Anti-Lebanon).

X.—SAXIFRAGACEÆ.

- Ribes Orientale*, Poir. Dunnîyeh (Lebanon).

XI.—UMBELLIFERÆ.

- Buplevrum Libanoticum*, Boiss. et Bl. Wadi Tanîyyat-er-Râs (Anti-Lebanon).
Hippomarathrum Boissieri, Reut. et Haussk. Wadi Tanîyyat-er-Râs (Anti-Lebanon).
Pimpinella corymbosa; Boiss. Wadi Ibrisah (Lebanon).
 " *Tragium*, L. var. *depauperatum*, Boiss. Ma'arrat-el-Bash-Quryeh (Anti-Lebanon).
Reuteria tenuis, Boiss. et Haussk. Yebrûd.
CHÆROPHYLLUM AURANTIACUM, Post., sp. nov. Subalpine wheat fields on right of road between Sir and el-Merj-et-Tawîl (Lebanon).
Johrenia fungosa, Boiss. Wadi Tanîyyat-er-Râs (Anti-Lebanon).
 " *WESTII*, Post. Plain at head of Wadi Tanîyyat-er-Râs (Anti-Lebanon).
Turgeniopsis fœniculacea, Fenzl. Merj-Hîn (Lebanon).

XII.—CAPRIFOLIACEÆ.

- Lonicera nummularifolia*, J. et Sp. Halimât-Qobu. Wadi-el-Mâl (Anti-Lebanon).

XIII.—RUBIACEÆ.

- ASPERULA GHAUTENSIS*, Post. El-Ghautah (Damascus).
Galium canum, Req. Yebrûd.

XIV.—DIPSACEÆ.

- Cephalaria stellipilis*, Boiss. Wadi Tanfyyat-er-Râs (Anti-Lebanon).
 „ *dipsacoides*, Boiss. var. *Libanotica*, Boiss. 'Ain-Sofar (Lebanon).

XV.—COMPOSITÆ.

- Poetia lanuginosa*, D.C. Wadi Ibrisah (Lebanon).
Achillæa Santolina, L. Tal'at-Mûsa (Anti-Lebanon).
Anthemis Cotula, L. El-Ghautah (Damascus).
Pyrethrum densum, Labill. Halimat-Qobu. Sudr-esh-Sheikh-'Ali (Anti-Lebanon).
Senecio erraticus, Bertol. El-Ghautah (Damascus).
Cousinia foliosa, Boiss. et Bal. Wadi-el-Mâl (Anti-Lebanon).
 „ *Dayi*, Post. Halimat-Qobu (Anti-Lebanon).
Centaurea Postii, Boiss. Yebrûd.
Jurinea Stæhelinæ, D.C. (?) Wadi Ibrisah (Lebanon).
Phœopappus longispinus, Post. Ma'arrat-el-Bash-Quryeh (Anti-Lebanon).
AUTRANIA PULCHELLA, Winkler et Barbey. Rijâl-el-'asherah (Lebanon).
 A new genus and also a new species.
Carthamus flavescens, W. Yebrûd.
Sonchus asper, Vill. El-Ghautah (Damascus).
Scorzonera Makmeliana, Boiss. Rijâl-el-'asherah (Lebanon).
 „ *rígida*, Auch. Rijâl-el-'asherah (Lebanon).
Tragopogon bupthalmoides, Boiss. var. *humile*, Boiss. Wadi-es-Şifşâf
 (above Merj-Hîn).

XVI.—CAMPANULACEÆ.

- Campanula stricta*, Labill. Ascent to Rijâl-el-'asherah (Lebanon).
Podanthus virgatum, Labill. Rijâl-el-'asherah (Lebanon).

XVII.—PLUMBAGINACEÆ.

- Acantholimon acerosum*, Willd. Wadi-Tanfyyat-er-Râs (Anti-Lebanon).
 „ *Armenum*, Boiss et Huet. Halimat-Qobu (Anti-Lebanon).

XVIII.—PRIMULACEÆ.

- Androsace villosa*, L. Rijâl-el-'asherah (Lebanon).

XIX.—OLEACEÆ.

- Phillyrea media*, L. Wadi-Ibrisah (Lebanon).

XX.—BORRAGINÆ.

- Onosma sericeum*, Willd. Jubbeh (Anti-Lebanon).

XXI.—SCROPHULARIACEÆ.

- Verbascum simplex*, Labill. Yebrûd.
 " *ptychophyllum*, Boiss. Yebrûd.
 " *Cæsareum*, Boiss. Sir to Neba'-es-Sikkar (Lebanon).
 " *Damascenum*, Boiss. Yebrûd. Sudr-Wadi-el-Mal (Anti-Lebanon).
 " *ALICIE*, Post. Wadi-Ibrisah, near el-Hûrmûl (Lebanon).
Serophularia xanthoglossa, Boiss. Jebel-Keniseh ; var. *decipiens*, Boiss.
 Mu'arrat-el-Bâsh-Quryah (Anti-Lebanon).

XXII.—LABIATÆ.

- Micromeria Libanotica*, Boiss. var. *major*, Post. Tal'at-Mûsa (Anti-Lebanon).
Thymus hirsutus, M.B. Ascent to Rijâl-el-'asherah (Lebanon).
 " *ALFREDÆ*, Post. Top of pass above Rankûs (Anti-Lebanon).
Salvia grandiflora, Ettl. Sir to Neba'-es-Sikkar (Lebanon).
Ballota saxatilis, Sieb. Wadi-el-Qarn (Anti-Lebanon).
 " *Antilibanotica*, Post. Throughout northern Anti-Lebanon.
Tecurium Socinianum, Boiss. Yebrûd.
Stachys nivea, Lab. Tal'at-Mûsa (Anti-Lebanon).

XXIII.—SALSOLACEÆ.

- Nœa spinosissima*, Moq. Base of Tal'at-Mûsa (Anti-Lebanon).
Atriplex Tataricum, L. Jubbeh (Anti-Lebanon).

XXIV.—POLYGONACEÆ.

- Polygonum polycnemoides*, Jaub. et Sp. Wadi-es-Şifşâf (Lebanon).
Rumex Orientalis, Bernh. Sir to Neba'-es-Sikkar (Lebanon).
Atraphaxis Billardieri, Jaub. et Sp. Wadi-Taniyyat-er-Râs (Anti-Lebanon).

XXV.—BALANOPHORACEÆ.

- Cynomorium coccineum*, L. Yebrûd Plateau.

XXVI.—EUPHORBIACEÆ.

- Euphorbia pubescens*, Vahl. Shetûrah (Coelesyria).
 " *caudiculosa*, Boiss. Rijâl-el-'asherah (Lebanon).

XXVII.—URTICACEÆ.

- Parietaria Judaica*, var. *brevipetiolata*, Boiss. Yebrûd (Anti-Lebanon).
Urtica dioica, L. Wadi-es-Şifşâf, near Merj-Hîn (Lebanon).

XXVIII.—CONIFERÆ.

Abies Cilicica, Ant. et Ky. Dūnniyeh (Lebanon).
Juniperus excelsa, M.B. Universal in Upper Lebanon and Anti-Lebanon. (Arabice, *Lizzdb.*)

XXIX.—SALICACEÆ.

Salix sp. Wadi-es-Sifṣāf near Merj-Hīn (Lebanon).

XXX.—CUPULIFERÆ.

Quercus coccifera, L. Wadi-Ibrīsah (Lebanon).

XXXI.—LILIACEÆ.

Scilla Hanburyi, Baker. Yebrūd Plateau.
Allium sphærocephalum, L. (?) Merj-Hīn (Lebanon).
 „ *MAKMELIANUM*, Post. Rijāl-el-'asherah (Lebanon).
 „ sp. Wadi-es-Sifṣāf, near Merj-Hīn (Lebanon).

XXXII.—NAIADACEÆ.

Potamogeton pectinatus, L. Birket-Buṣwāyeh (Lebanon).

XXXIII.—CYPERACEÆ.

Carex divisa, Huds. Wadi-es-Sifṣāf, near Merj-Hīn (Lebanon).
Cyperus longus, L. El-Ghautah (Damascus).

XXXIV.—GRAMINEÆ.

Alopecurus involucratus, Post. Judeideh (Anti-Lebanon).
Stipa sp. Halimat-Qobu (Anti-Lebanon).
Festuca ovina, L. var. *pinifolia*, Hackel. Rijāl-el-'asherah (Lebanon).
 „ sp. Rijāl-el-'asherah (Lebanon).

Besides the comparatively small number of plants collected, and named above, many more were observed, which have been noted in the lists previously published. The names in *italics* are those of plants not heretofore observed in the locality mentioned. Those in **SMALL CAPITALS** are new species. The comparatively large number of these, 8 out of 106, illustrates the unexplored character of the region visited.