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## Notes on a Section of North Mexico

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and Mohammedan, the last-named faith gaining ground steadily at the expense of the others; but notwithstanding a devoutness easily raised to fanaticism, there is evidence of an undisturbed heathenism but thinly covered over. Dr. Hassert tells an amusing story of how the children play about in the churches during mass or sermon, and if one becomes too uproarious the officiating clergyman thinks it not undignified to lay the youngster across his knee and administer suitable correction.

The return journey to Skutari was made by the ordinary road, which has lost much of its importance since the development of the Macedonia railway system. It follows the narrow valley of the Drin till that river takes its great bend northward, below the junction of the Black and White branches, when it cuts across mountain and valley to the great serpentine plateau of Puka. The Turkish government is at considerable trouble to keep this road open, providing escorts between the numerous block-houses along the line of route.

Shorter journeys followed into the wilder mountainous regions, during which Dr. Hassert collected much topographical information, and gained much insight into various modes of political education practised in Turkish territory by Austria and Russia, chiefly in connection with the Roman Catholic and Greek Church organizations. It would seem, however, that little or nothing can be done in or with the country until the universal blood-feud system is abolished. At present all work is done by women. Dr. Hassert was even forced at one time to travel under the protection of an elderly matron; the men do nothing but seek revenge upon each other.

Ultimately the Turkish authorities indicated that Dr. Hassert had made enough sketches and photographs and measurements, and that he had better be off. A final excursion across the Boyana into Montenegrin territory, with an ascent of Rumija (5220 feet), accordingly concluded the expedition.

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## NOTES ON A SECTION OF NORTH MEXICO.\*

By J. GURDON L. STEPHENSON.

ON December 23, 1896, an expedition left England for North-Western Mexico. The map herewith represents a portion of their work. Guaymas, on the Californian gulf, was reached on January 24, 1897, and two days later the party proceeded down the coast for some 200 miles in a small sailing-vessel, chartered for the occasion. At Topolobampo the expedition landed, and from thence the general direction followed was as shown on the map. The instruments made use of were practically those recommended by Mr. Coles in 'Hints to Travellers.'

Frequent observations were taken as the expedition proceeded, and sketch-maps were made of the country traversed. Altitudes were taken with the boiling-point apparatus and the aneroids. Besides the best maps obtainable of the country which were made use of, Mr. J. Fewson Smith, the engineer of the Rio Grande Sierra Madre and Pacific Railway, most courteously placed his survey plans at the disposal of the author.

An excellent chart of Topolobampo harbour, by the United States Navy, exists, and examination showed that the bay can, by the expenditure of a comparatively small sum of money, be made into a fairly good port. The depth of water on the bar is now  $2\frac{3}{4}$  fathoms, the rise of the tide being from  $4\frac{1}{2}$  to 6 feet. The question

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\* Map, p. 464.

of the improvement of this harbour is now being considered by the Mexican Government.

Stretching northwards for some 30 miles is an immense plain, which is fertile even under the primitive cultivation of the natives. This plain can be easily irrigated by the Fuerte river, and in places land has been taken up by American colonists. Much of it is now covered by trees of great variety, and samples were obtained of *lignum vitæ*, logwood, rosewood, mahogany, walnut, ebony, and many other woods suitable for cabinetwork. At San Blas are low hills, and a bar of rock across the river; here the gold belt commences, and stretches north as far as La Junta; several placers are worked by Mexicans and Indians in a very primitive way, and there are some good quartz veins in the hills. Near La Guasa there are sandstones and limestones containing fossils, while south of Fuerte is a belt of broken country, some 10 miles in width, showing frequent outcrops of schist, slate, and syenite. In the neighbourhood of Huites are extensive beds of auriferous gravel, which have been protected from denudation by sheets of recent lava. Near here one meets the foothills of the Sierra Madre, and a very short distance brings us into the mountain range itself. Throughout the district there appears to be no evidence whatever of glacial action; the valleys and gorges are very narrow, and their sides very steep.

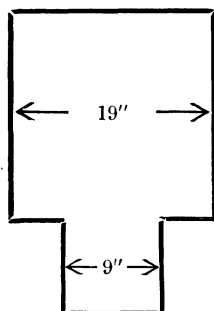
To the north of Batopilas, however, between the river Urique and the river Guajochic, on the eastern slopes, some peculiar bowl-shape hollows in granite were met with, which were taken to be examples of the "glacial mill." The country at this place has the appearance of glacial action, the hills being rounded, and the slopes of the valleys flatter, whilst boulders which appeared to be ice-marked were met with. Batopilas is a mining town of some 5000 inhabitants, the mines being worked chiefly with American capital. Large quantities of silver have been, and are being, taken from these mines, one of them, the San Miguel, being over 900 feet in depth. At a height of from 4000 to 5000 feet the pine forests commence, oaks of three varieties also occurring below and in a few instances above this elevation; they are generally small, but there are many oaks of 15 inches diameter.

Pines run from 60 to 100 feet in height, and from 15 to 24 inches in diameter, there being usually about ten such trees to the acre, with many smaller and occasionally larger trees. In this district there are said to be some 12,000 Tarahumari Indians—a small but athletic race, whose power for travelling long distances in a short time is immense. These Indians hunt down the deer on foot. They live chiefly on corn, which they grow in the river-bottoms, and their houses are built of logs, each house usually having a small stone annexe, in which their corn is stored. Comparatively few of them now dwell in caves, the latter being now used only by the poor, and occasionally by young married couples, who have not yet built their hut and got their own piece of land cleared.

These Indians prepare the land for cultivation by girdling the trees; the stumps are afterwards burnt out, and the trees used as fences, for building their huts, or for firewood, and sometimes they are burnt *in situ* to get rid of them. The ground is ploughed by oxen with a wooden plough. The Tarahumaris possess considerable numbers of ponies, rather good-looking small cattle, and small rough sheep, from the wool of which the women weave blankets. Each settlement has its own "governor." The punishment of stealing is fourfold restitution; whilst a murderer has to support the widow of his victim until she dies or marries again, and, in the case of children, until they are able to support themselves. There are numerous cave dwellings along the Guajochic river, which formerly were used as burial-places, the corpse being placed upon the ground in a sitting posture, with a bow, arrows, and a gourd of meal beneath it, in the case of the male, rough weaving

implements being substituted for the bow and arrows in the case of the female. Now when a death occurs in any of their huts, the Tarahumaris at once desert it and build another, the corpse being buried for three days, after which it is taken up from the ground by the medicine man, who kills some animal by the side of it, and dismisses the souls of both to heaven; the carcase of the animal, cow, sheep, or goat, according to the position of deceased, goes to the medicine man, whilst the corpse is buried in shallow ground, from whence it is dug up and eaten by coyotes.

In lat.  $30^{\circ} 10'$  N., long.  $108^{\circ}$  W., there is a very perfect cave dwelling, a plan and description of which were presented to the British Museum, together with some relics removed therefrom by the author in 1897. This cave dwelling is at the head of a small cul-de-sac cañon. About 50 feet from the ground in the rock, which is here almost precipitous, occurs a rift or hollow, which bears traces of having been enlarged by the hand of man. This rift is from 7 to 8 feet in width, thus giving the same height to the cave-dwelling. The hollow goes back for a distance of some 14 or 15 feet from the face of the rock; this dimension, less the width of two walls and an outside gallery, being the width of the dwelling. All the walls are built of concrete, the outside one extending the whole length of the rift, and being pierced with splayed loopholes for arrows, and with doorways. Immediately behind this wall runs the gallery, about 3 feet in width, on the further side of which is another wall of lighter construction, pierced with openings of the following shape:—



About 12 inches from the floor, which consists of a hard cement concrete, is the bottom or sill of the doorway, which here measures 9 inches each way. At a distance of 9 inches from the sill the doorway widens to 19 inches, while the height of the whole opening from sill to lintel is 28 inches—the opening, in short, consisting of a 19-inch square resting on a 9-inch. The object of the peculiar shape of these openings, at first sight puzzling, is readily understood when one goes through them, the body passing easily through the 19-inch square, while the feet follow through the 9-inch. Frequent party walls of concrete, most of them pierced with similar openings, divide the interior into several small rooms. Some skeletons were found beneath the concrete floors in these rooms, each being wrapped first in wool, wound about with a fine cloth, then a coarser cloth, and finally the whole was enveloped in coarse matting. An olla containing very finely ground corn meal, several corn cobs of a very small size, weaving implements, the remains of bows and arrows, and some curious black pottery, were found with the skeletons, while hair and some dried flesh still remained on one of the skulls now to be seen at the British Museum. Access to the cave-dwelling is obtained by means of holes, cut in zigzag fashion on the face of this rock, just big enough to admit the fingers or

toes. Near this place, in many of the gullies, exist the remains of large stone terraces, evidently constructed as soil dams, the ground above these being used afterwards for gardens, some of which are cultivated to the present day. Going east from Bocoyna, a small town on the eastern slopes of the mountain, are extensive llanos, upon which many cattle are grazed, and Cusihiuriachic, a mining camp of considerable importance, situated in a barranca below, is passed. At Coyachic there is a considerable amount of land under cultivation, which is irrigated from the river, and the country from thence to Chihuahua is barren and stony, with here and there fertile valleys. North of Bocoyna are a series of small hills; the country is well watered, and several large ranches exist.

Between Guerrero, a town of about 2000 inhabitants, in a good agricultural and mining centre, and Casas Grandes, the country consists of elevated plains with occasional low rocky hills; there are several cultivated villages, and at Balle an extensive Mormon colony, with numerous green fields, gardens, and plantations.

The Casas Grandes, Boca Grande, and Diaz valleys, which lie between Casas Grandes and the international boundary at Columbus, are fertile, and have also been partially taken up by Mormons; but the country to the east of Lake Guzman more resembles that traversed by the Mexican Central Railway, and in the dry season, at any rate, does not look inviting.

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## THE CAUCASUS.

THE last volume of the *Memoirs* of the Caucasian Branch of the Russian Geographical Society (vol. xviii.) contains a number of papers full of interest.

M. N. Alboff, who has been engaged for several years in the study of the flora of Western Caucasus, in that part of the range which runs along the Black Sea coast, gives further results of his important work. In 1894 he made two very interesting excursions in that part of the range, and now gives, first, the diary of his excursions, and next his extremely interesting observations and conclusions relative to the flora of that region as a whole, and the flora of the limestone crags in particular. The paper is accompanied by a map,  $6\frac{3}{4}$  miles to an inch, of the Chernomorsk district, and the western part of the Sukhum *otdyel* (independent district). The first excursion was made to the Akhakhcha, the Kytsyrkha, and the neighbouring mountains; and the second, which lasted sixteen days, to the mountains Arashkha and Adzituko. This last excursion was especially full of interest, as regards new topographical observations and botanical collections. Full lists of plants collected, several of which are new (while some, like the new species named *Campanula regina* by the author, are of rare beauty), are given, as also a comparison between the limestone-crag flora of Abkhasia, Chernomorsk, and Mingrelia.

The interesting Tartar stem of the Kумыкs is the subject of an anthropological sketch by M. Pantukhoff, containing a discussion of their origin, and some anthropological measurements.

In a paper on the Highlands of the Chechenes, Madame A. Rossikoff gives a detailed account of her journey in that part of Daghestan, which is the more welcome, as up till now there is no complete geographical description of the region, and the very villages are marked inaccurately on the maps. The mountaineers, who fought so brilliantly under Shamil, are also little known. Madame Rossikoff begins with the beautiful plateau or terrace of Vedeñ (last stronghold of Shamil); then she describes the Chaberloi plateau, the valley of the Keri, the gorge of the Argun, and the pass Ityn-kul. A map,  $3\frac{1}{2}$  miles to the inch, accompanies the paper. Several samples of Chechen folklore are given.













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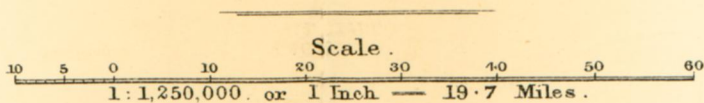






# A SECTION OF NORTH MEXICO

Showing the Journeys of  
J. GURDON L. STEPHENSON, F.R.G.S.  
and  
A. KRAUSS, F.R.G.S.  
1897.



Route.