

## ON THE PAST IN THE PRESENT IN ASIA.

BY JOHN BELLOWS.

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DURING the closing days of 1892 I was travelling from Moscow to Tiflis with an English friend. The last one hundred and thirty miles of this journey was taken up in crossing the great mountain barrier of the Caucasus, from Europe into Asia: or rather from Russia, where Asia overlaps Europe, to the Transcaucasus, where the European tide of change is very slowly wearing its way into the cliff of Oriental thought and customs that belong to a distant past.

It is through the Tartar influence in its history, and the Tartar element in its population, that Asia overlaps European Russia. A Western European is at once struck in Petersburg and other Russian towns with the "Dvors," or markets, where the shops are built round a cloistered square: that is, they are a modification of the Oriental Bazaar. This Asian influence is more striking in Moscow than in Petersburg. Moscow is European in its railroads and steam-engines, its factories and tram-lines, its telegraphs and telephones: Asiatic in its "Kitai Gorod," or, Chinese town, as the Kremlin is called: in the quaint old-world style of the Kremlin's battlemented walls,<sup>1</sup> in the gorgeous coloring of its bulbed domes; in its multitudinous bells; and in a variety of minor matters, of which I will instance but two. The Chinese abacus, or counting-frame, is used

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<sup>1</sup> These walls were anciently of timber; a stockade such as still surrounds some of the minor towns and many villages in China. The Comte de Kergaradec (Consul-General for France), who resides in Moscow, told me he also had been struck with the Chinese character of the Kremlin. "Kitai" is another form of Cathay, an old name for China.

in every bank and shop in Moscow and throughout Russia. The Chinese influence is curiously shown in the ornaments painted even on the brewers' drays; where we constantly meet with the chrysanthemum pattern on a scarlet ground. The same ornament is used on the wooden spoons made here, and sold all over the empire, for the use of the peasantry. I bought some of these Muscovite spoons in the Armenian bazaar at Tiflis. The wood is varnished, and ornamented with bronze, as in Chinese and Japanese work: while the shape itself is the European bowl and "fiddle-pattern" handle. I should mention that the Armenian of whom I bought them put them up in a paper bag of his own making. It was covered with text in a foreign alphabet of Phœnician origin; and there were pictures in the text, over which might be deciphered the words "PUNCH, OR THE LONDON CHARIVARI."

My English friend and I had for travelling companions over the mountain, a Russian interpreter; a Georgian wine-grower, who was on his way home from Stavropol to rejoin his wife and children at his vineyard in Kakhetia; and a Jew, homeward-bound to Tiflis. Our conveyance over the snow on the summit was a covered sledge drawn by four horses. It allowed us each but cramped space, and it was no small relief, after fifteen hours' continuous rise, to find we had surmounted the pass, over eight thousand feet in altitude, and were beginning to run down on the Asian side of Mount Kazbek, which here towers more than 8,500 feet higher still above us.

The Russian government has built substantial stations all along this military road, and our Georgian fellow-traveller took some refreshment at Lars, the first of these in descending the mountain. When he had resumed his seat in the sledge, he threw himself back, closed his eyes, and struck up a wild melody in his own tongue. He was a very remarkable-looking man: tall, powerfully-built and with a face so exactly of the type of the Assyrian kings that he



might just have stepped off one of the Nineveh slabs in the British Museum.<sup>1</sup>

“Was the wine good?” asked our interpreter, as soon as he had come to a pause in his song. “Nay,” replied Belshazzar, “It is my heart that is good, because I shall now soon be with my wife and children”; and then he closed his eyes again and continued his song. The notes were strange and wild: unlike anything European; but they struck me as the more strange because I had heard them once before. Four years previously, curiosity had led some members of my family into the great Synagogue at Frankfort, near the old historic house of the Rothschilds. Part of the service consisted of a chant by a youth of fifteen; a strange, wild, high-pitched wailing, rather than what would be classed as music by a European ear. And here, under Mount Kazbek, was an Asiatic, of kindred type with the Jew, if not himself a Hebrew, singing the same notes, the same “motif” intonation I had heard in the Synagogue at Frankfort.

What could be the clue to this riddle? Asia certainly had not borrowed this music from Europe; but an Asiatic people, who at this day form a colony 30,000 strong in a great European city, must have carried it there. Further: this people, “scattered and peeled” from their own land for eighteen hundred years, were, five-and-twenty hundred years ago, dwellers on the banks of the Euphrates, at no very great distance from here. They must have carried the tune from the same source from which our Georgian’s ancestors brought it.

Among the Caucasian Jews I followed up this enquiry on the identity of the Synagogue music at Frankfort with Asiatic music of to-day. The idea was new to them; but

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<sup>1</sup> The persistence of the type is wonderful. If I believed in the Transmigration of Souls, I should say that I have seen two of the old Assyrian Kings, dressed in the uniform of Russian officers, sitting down at a table in the hotel at Elizabetpol, drinking a bottle of wine together! I only wish I could have photographed them, to enable the reader to appreciate the uncanny feeling that crept over one at the time!

after reflection they said they believed I was right, and that the sounds must have come down from the Babylonish captivity. It is even possible, in a land where "rien ne commence: tout se continue," that the motif or style of this singing may go back to before the days of Abraham, when he "dwelt in Haran," in the same valley of the Euphrates.

There are tribes of Jews in the Transcaucasus, especially about Kutaïs (the ancient Colchis, from whence Jason brought the Golden Fleece), who claim that they have been settled there ever since the Babylonish captivity. They are dark in complexion, and resemble the Georgians, yet retaining the unmistakable type which leaves no doubt as to their ancestry.

Besides these there are 21,000 Jews scattered through Daghestan (Dagh=mountain; Stan=country), the region to the east and northeast of the Georgian Pass. Most of these live in "Aouls," or villages, and are engaged in agriculture. Mahometanism has so far repressed them that they have but little knowledge of the Talmud; though in one of their villages they have a parchment MS. of the ten commandments, two or three centuries old.

Some years ago a Hebrew inscription was found at Mzhket, the station at the southern end of the Georgian Pass, through which we have been journeying. The following translation is by the editor of the "Kafkaz," the leading journal of the Caucasus, and himself a skilled antiquary:—

"Year 131 from the Captivity. Rechabin.  
 " \* \* \* to the palace of those who rest eternally  
 " with the just  
 " the follower of the law  
 " of the Ancient High One  
 " \* \* \* \* \*  
 " the weak will be exalted "

We must not forget that the Israelites were transplanted by Shalmanezer, the Assyrian king, close to the borders of the



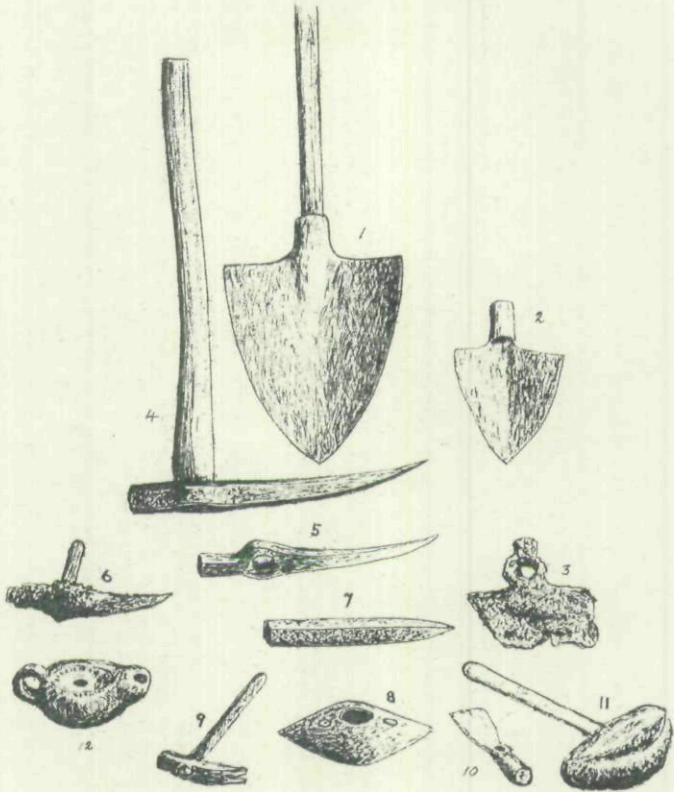
Caucasus; that is, "to the cities of the Medes." That Media at one time included the valley of the Kurus, or Kur, on which Tiflis stands, is shown by "Cyrus the Mede" having taken his name from this river. This removal of the ten tribes was more than a century earlier than the Babylonian Captivity of the tribes of Judah and Benjamin. (See 2 Kings xvii. 6.)

My own impression is strong that the Armenians who still inhabit the Armenian Plain, and the northwest of Media—the present Persian Province of Aderbijan—as well as the Caucasus, are the descendants of these people. It is impossible to travel among them without being struck with many little things in their daily life that recall manners and customs touched upon in the Bible.<sup>1</sup> I have many photographs of Armenian types of feature—very suggestive of a Hebrew origin—one of which, a group of school-girls, especially, shows several strongly Jewish faces. Add to this the similarity of the Armenian chant-music to that of the Synagogue; the fact that the Armenians abstain from pork; and the occurrence of Hebrew words in the speech of Aderbijan; and the probability of this origin seems to me difficult to set aside.<sup>2</sup>

It was late on the afternoon of the second day of our journey over the mountain before we emerged on the great plain of the river Kur. The soil along many parts of the bank is a rich, deep loam, resulting from the decomposition

<sup>1</sup> Dr. Baedeker, who has made a journey to Eastern Siberia from the Transcaucasus, since our return, tells me that on one occasion he was ascending a mountain-side near Shemaka, at night. In the gray dawn his party was hailed by an Armenian shepherd, who was followed by his flock, and who bore a weakly lamb in his arms. Presently the man stood still, and bent in an attitude of anxious listening for some time; then gently laid the lamb on the ground, and calling his dog, committed the flock to its keeping, while he started off alone into the rocky solitude. Dr. B. and his guides waited to see the result; and in about an hour the shepherd's figure stood out in the sunrise on the heights above; and with it that of the lost sheep he had gone into the wilderness to seek. What poem on earth could be more touching or more beautiful than this scene, older than history, yet new every morning!

<sup>2</sup> The Armenians of North Persia speak two languages: their own, and "Aderbijansky" (*i. e.*, a dialect of Tartar, or Turkish.)



- 1 Cornish Mining Shovel
- 2 Caucasian Shovel drawn half scale of the Cornish
- 3 Ancient Hoe found at Rio Tinto
- 4 Cornish Pick
- 5 Caucasian Pick, forged at Tiflis
- 6 Roman Pick from Rio Tinto
- 7 Gad from Tiflis
- 8 Masons Pick, Tiflis
- 9 Claw Hammer from Shusha
- 10 Caucasian Adze
- 11 Ancient Hammer, Rio Tinto
- 12 " Lamp, Ditto



of volcanic deposits. As we were jolting wearily along—for twenty-six hours of continuous sitting in the cold wonderfully dampens one's enthusiasm—my attention was suddenly caught by a shovel with which a laborer was digging near the roadside; for it was of the form used in the Cornish mines. [See Fig. 1.]

1. Cornish Mining Shovel. 4. Cornish Mining Pick.
2. Caucasian Shovel (its usual size in the original would show double as large as this in the sketch).
3. Hoe found in Roman workings in Rio Tinto mines, Spain.
5. Caucasian Mining Pick. 6. Roman Pick from Rio Tinto.
7. Miner's Gad, Tiflis. 8. Stonecutter's Pick, made at Tiflis.
9. Claw-hammer used by Armenian silversmith at Shusa. 10. Adze, Tiflis.
11. Miner's Hammer (Roman), Rio Tinto. 12. Roman Lamp, Rio Tinto.

Some years before I had seen in use in Germany the same long-hilted, triangular shovel; and as German miners were brought to Cornwall, I believe in Queen Elizabeth's time, to instruct Englishmen in improved methods of deep mining, I at once concluded that the Cornish shovel must have been introduced by them; if not, indeed, during a still earlier visit of German tin-miners to Cornwall, under an ancestor of the Godolphins. But here was the same instrument in Asia; and the problem needed further examination; for it was not solved.

We had to make a stay of some weeks in Tiflis; and during this interval had opportunity for frequent visits to the bazaars, and for examining the tools and methods used in some of the handicrafts. Tiflis is a great centre of commerce between Persia and the Central Asian provinces on the one hand, and the Black Sea, with Constantinople, on the other; and the variety of types, tribal and national, one meets with in the streets, is as great, perhaps, as in any city in Asia.

Besides some sixty different peoples that make up the population of the Transcaucasus, now, as in the days of Strabo, and representatives of whom may, from time to time, be encountered in the city, Tiflis itself has over 130,000 souls, of six different nations, each of which

retains its individuality, and holds somewhat aloof from the rest. There are the Russians, constituting the official and upper classes, as well as Cossacks and other military; Georgians; Armenians; Tartars (some of them descendants of the soldiers of Ghengis Khan)—a German colony; and about 10,000 Persians. Most of the masons in Tiflis are Persians, and the tools they use are Persian—*i. e.*, of course of definitely Asian types. Among those to whom I turned for information about the Georgian pointed shovel to which allusion has been made, was Samuel Rooks, an English engineer, long resident in the country. He told me that it was the ancient native pattern, and that it was an excellent digging tool, especially in the hands of the Tartars, who are remarkably clever at well-sinking and other earth-work. A Tartar will dig a well for a small sum, turning round and round as he works, in a circle scarcely larger than gives him standing-room; drawing up the earth in a skin bag, and leaving the hole beautifully round and true as he finishes it.

Samuel Rooks advised me to go to the smiths' shops just above the Persian bazaar, and have a shovel forged for myself. I did so. Entering a shop where shovels were hung up at the door, I told the smith (a Georgian) that I wanted two made specially, one-half the usual size, but exactly of the sort used by farmers. My reason for getting new ones made, was that quite lately the Town Authorities have imported steel shovels from Germany, for use by the scavengers, on account of their lightness, and I wanted to be certain of getting the real native implement, and not a foreign one.

The smith was a bright, intelligent fellow, and after a sketch with chalk, to show that he had grasped my meaning, he took a lump of iron the size of a man's hand, and perhaps an inch thick, and placed it in his fire. All the smiths and metal-workers in Tiflis use charcoal; I think they are obliged to do so, to avoid smoke in so densely crowded



a town. One of the picturesque sights of the bazaars is the number of donkeys that bring in this charcoal from the forests. They are loaded so as to form a hump or peak, that makes them look like little dromedaries, mingling with the camels and buffalo teams that throng the narrow streets. The Georgian signalled to his strikers, and in swift succession his hammer and their two sledges rang on the little mass of iron till one side of it was beaten to a plate, the other being shaped at second heat for the socket. The edges were trimmed, and the whole dressed with a rough file, till it took the form here shown (Fig. 2). A second shovel I left to be finished, and called for it, when I paid for the pair. I think the whole sum charged was a rouble (say half a dollar, or two shillings English).

I noticed that the anvil in this smithy, as in others we visited, was beaked, like those we are accustomed to; and that the swages and other tools were of our familiar types. The beaked anvil is shown on a Roman painting in Pompeii; so that the shape was the same in Italy 1,800 years ago as that we are using to-day.

I went to another smith to get a pick and gad made such as miners use in the Caucasus. Here is the result. (Figs. 5 and 7).

In masons' tools I had noticed the same forms as those with which we are familiar in the west: the lozenge-shaped building trowel; the oblong square plastering float with the handle attached to the plate. A similar form, made of wood, has been found in Egypt, used by the earliest Pyramid-builders.

Stone-cutting tools were also identical with ours. Noticing that these seemed rather a specialty in one of the forges of the Persian quarter, I went in and asked the smith if he could make me a double-pointed pick, somewhat smaller than those generally used, but of the usual shape. This man, I found, was a Greek, named Nikola, an immigrant; but as he had, of course, to conform to the usual patterns of tools

used in the Caucasus, his nationality made no difference for my purpose. He could not speak Russian, however, and I had to hold converse with him through two interpreters. Our Russian attendant gathering my meaning in English, passed it on to a Persian, who turned it into "Aderbijan-sky," as it is here called; that is, the dialect of Turkish or Tartar spoken throughout the Persian Province of Aderbijan, and largely used by Armenians and Tartars in the Caucasus. It is to Western Central Asia what French is in European travelling: a general medium of intercourse. Nikola seized the idea at once, and searching among his stock brought out the pattern of pick I wanted, as well as two others used in dressing stone by the Persians. One was a hammer with two perpendicular edges cut into teeth about a quarter of an inch long; the other showed a flat of two inches square, cut with deep V grooves at right-angles, so as to leave the whole surface covered with sharp points a quarter of an inch asunder. All these are now used among Europeans.

Selecting a piece of steel, the smith placed it in the fire and signalled to his boy—an Armenian—to blow. The hearth was a low square block of masonry in the middle of the shop. The bellows, which stood at the back of it, consisted of two pig-skins, or two calf-skins, placed perpendicularly on the ground, with a board between them, and two others on the sides with handles. The boy grasped one in each hand—his arms being wide apart, and began to sway himself from side to side two or three feet, left and right alternately, so that as one skin was emptied the other was filled, keeping up a strong continuous blast. Here was clearly the origin of the term "a pair" of bellows; the word bellows itself probably being from *pellis*, a skin, of which the Saxon form is *Fell* (as in *Fellmonger*).

I was struck as I watched the Greek skilfully hammering the dazzling hot steel to its shape, by noting how without any gauge or template he wrought it not only to the form



we still use in Europe, but drew its point to about the same angle that our masons employ.

The persistence of even so fleeting and evanescent a thing as a set of sounds has been already instanced in the Georgian wine-grower's song, reproducing notes that resounded in the Psalms in Solomon's Temple; if not a thousand years before that on the plains of Chaldea. In this matter of a cutting tool, experience has no doubt established a model which has been kept to, for probably as long a period. Similarly, I have found the angle of the piers in the Roman bridge at Newcastle, identical with that of cutwaters I have measured in modern bridges.

At a certain point in the forging, the assistant, or striker, laid down his sledge for his master to finish off the work with the hammer. Our Persian interpreter leaned towards him and said something, when the man left the shop; presently returning with a European chair which he had borrowed for my use, as I had still some little time to wait before my pick was completed. I am sure I shall be excused for mentioning this, for it is but one instance out of many of the little acts of courtesy we received from the people among whom we travelled in different parts of the Russian Empire. I had paid for the pick—a rouble—and was taking it up to depart, when Nikola asked to have it back for a moment, and putting it again on the anvil held a tool to it, which he ordered his man to strike with a light blow. "I always like to put my mark on my work," he remarked by way of apology; and I saw he had struck a neat N on the steel. (Fig. 8).

The artisans in the bazaars all seemed marvellously industrious. In the smithies they filled up odd moments between the execution of orders by making little things for stock; especially horseshoes, nails, and currycombs. The Asiatic currycomb is a bit of sheet iron bent over in section to three sides of a square  $\sqsupset$ , the two edges being filed into teeth. Three stays are fixed crosswise, on which are placed loose

rings, the jingle of these being supposed to please the horse or camel while he is being groomed. If we place this instrument alongside one of our own currycombs, we shall see at once that the latter is simply a combination of three of the Asiatic ones placed side by side, and fixed to a plate at the back. This multiplication necessitated a handle, as the whole became too broad to grasp by the back, and the teeth had to be made smaller. Still, for a shaggy beast like a camel, or an unclipped horse or mule, the ancient form is better, as being more elastic.

The horseshoe is a plate of iron with a small hole in the centre, and the European shape is only a modification of this into a rim of iron. Many antiquaries have fancied that the Romans did not shoe their horses, but this is a mistake.<sup>1</sup> The very fact of their paving their roads shows they must have shod their horses; and besides this, horseshoes have been found in many places with Roman remains. Professor Church tells me that he has examined the equestrian statue of a Roman Emperor at Orange, in France, and on the upturned foot of the horse, little points are marked in the marble, showing the nails.

From Tiflis we visited the great copper mines at Keda-

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<sup>1</sup> This error is based on the assumption that a horseshoe is not mentioned by any classical writer. Negative evidence is very dubious at best; but even this negative evidence cannot be admitted: for in Suetonius's "Life of Vespasian" there is a capital story of one of the Emperor's muleteers stopping to have his mule shod in order to give some friend of his an opportunity of presenting a petition to Vespasian. The latter saw through the trick; and when they were ready to start again he remarked that the petitioner ought to pay half the smith's charge, seeing it was as much on his account as the Emperor's that the work had been done.

A similar error has been fallen into by antiquaries with regard to the supposed absence of camels in Egypt, anciently, on the ground that they are never shown on Egyptian monuments. Even Dr. Mommsen, the most fascinating writer on Roman antiquities, asserts that the camel was unknown in Egypt until the third century of the Christian Era. The narrative in Genesis, of the camel caravan that took Joseph to Egypt, would alone disprove such a statement; besides the fact that the camel is figured on one of the monuments. But Flinders Petrie, in his "Ten Years Digging in Egypt," gives a drawing of camels that are scratched on stones older than any of the monuments in that land.



bek, on the east of Lake Goktcha. These mines, which have been worked from ancient times, now belong to the firm of Siemens Brothers, the well-known electricians, who constructed the Indo-European line of telegraph. Some two thousand hands are employed in all; most of them Armenians and Tartars. The best European methods and appliances are used in the working; yet I noticed also among the implements the same pick and shovel I had had made in Tiflis; but how could it be decided whether these were imported by the German firm or had been previously used by the natives? One of the managers suggested that I might satisfy myself on this head by cross-examining the oldest man in the place—an Armenian who had worked in Kedabek before the Siemens came to it. He was sent for, and before long made his appearance; a venerable old man of eighty-four (if I remember rightly), with snowy hair and beard, and a considerable difficulty of hearing. Our interpreter asked one of the clerks in Russian, who passed on the query in Armenian, whether the pick and shovel sketched on the bit of paper before him had been brought here by Siemens Brothers: or whether he remembered them before the Germans came to the mine. Before the reply had time to sift through its double delivery, I saw from the old man's action what it was. "No, that pick and that shovel were the old tools of the country before the Siemens ever came to Kedabek."

"The old tools of the country": and what a country! A day or two later, we were driven to the summit of the mountain above the mines, by William Bolton, the general manager (who is of English descent). Near the top, we left the sledge to examine an old and decaying oak in the forest, which is considered a holy tree by the Armenians at the mines. "They come here on Sundays," we were told, "and burn candles to the Virgin at the foot of that tree." Close against it, and almost buried in the root, was a stone slab, completely covered with wax, and black with the

smoke of tapers burned for generations. Here, then, we were in the presence of such an oak as had been worshipped in some of the "high places" in ancient days, and the worship of which, thinly veiled by the name of Christianity, was going on yet; and of the stone that was probably an object of adoration for many generations earlier still: all three eras overlapping, so to say, and co-existent.

Few spots could be more calculated to excite the imagination. From the summit above us, 5,500 feet in height, we look westward over a wild abyss of Armenian mountains to a great volcanic barrier thirty or forty miles in length, and in one part 11,000 feet high, which shuts in the lake of Goktcha. This lake is a thousand feet higher than the summit we stand on: a storm-beaten and desolate sea, the thunder of whose billows dashing against the tremendous basalt cliffs is often heard for twenty versts away in the valleys below.

In the Kedabek valley, we had our first opportunity of examining the Asiatic turbine, which, as a mill-wheel, is universal in the Caucasus. In all that relates to hydraulics, Asia has an incontestable lead in antiquity. This is partly due to the necessity which makes irrigation a condition of cultivation over so large a portion of the continent: India, Turkestan, Persia, for example. Palmyra we now know to have been supplied with water from an underground canal across the desert; and the vast earthworks that remain in Mesopotamia give us some idea of the scale on which the canals were made from the Tigris and Euphrates. My friend Colonel Holland, who preceded General Gordon in China, tells me that the embankments in that empire surpass the whole work of the railways in Europe; while the light bamboo water-wheel employed there for irrigation, though probably in use for ages, is, I venture to say, a better contrivance than any we use, for the lifting of water to such heights as thirty feet. A Roman dipping-



wheel found lately in the Rio Tinto mines in Spain, is certainly not so good an appliance.

Of the turbine, my friend Wilson Sturge, who has been for some years British Consul at Poti, writes: "Early in the century, a Frenchman, I believe, introduced the turbine. When I was a boy, they were rare in England: in fact, hardly known. But the turbine or horizontal water-wheel, from which the turbine is developed, is the ordinary water-wheel in use here, and has been, no doubt, for centuries." The principle was known in France in the last century, but its practical application has only been made, as Wilson Sturge says, within our own era; if we except what is known in Scotland as Baker's mill, which is, I think, older. The oldest water-mill mentioned in history, was one at Pontus, described by Strabo; *i. e.*, on the Black Sea, not far from the Caucasus.

At Kedabek we were taken about half a mile down the valley to a mill belonging to a Tartar. The old man promptly and courteously showed us the mechanism. First a stream was led along an artificial channel, to get a head of about twelve feet. From this the water came down a shoot, made by hollowing a tree, which was placed at a slant of forty-five degrees: the open or upper side of the hollow being secured by a plank nailed lengthways over it. At the bottom was a horizontal wheel about three feet in diameter, set round on its upper side with stout float-boards, diagonally placed, to receive the impact of the water. The shaft or axle of this wheel went up through the mill-stones, of which the nether one was made fast to it. The foot of this driving-shaft rested in a bearing on a beam of oak, arranged as a lever, so that by tightening a wedge under one end of this lever, the turbine with the nether millstone could be lifted nearer the top stone; or vice-versa; thus determining the fineness or coarseness of the meal. On the wooden framing above the hopper was pasted a written prayer, in Arabic, from the Koran, "for

luck." The old miller told us he could grind about thirty-six poods of meal a day (a pood is  $\frac{1}{3}$  of a cwt.). It is a pleasure to mention an instance of refined feeling on the part of this old Tartar: for he was so grateful for the few kopeks we gave him, that when we came away, he ran on in front of us for some hundred yards in order to place better stepping-stones in the brook we had to cross, and save us the chance of wet feet on a very cold day.

In the city of Tiflis itself, the whole of the corn is ground in stream mills, that is, mills worked by the rush of the river Kura against flat floats on wheels of large diameter. When these were invented I do not know; but they were first used in Rome, by Belisarius, during the siege by the Goths, in the sixth century.

But grinding by water-power implies a certain degree of civilized and settled life. If we go back for a moment from this to the family life of the nomad Tartars in the Steppe, we find ourselves at the beginning of things; and it was to me very interesting to trace from that beginning the development of the bread-oven which fills so important, though humble, a place in our daily existence.


The original oven is a pit dug in the ground, and lined with clay. I have a photograph, taken in the wilderness, of some Tartar women making bread for baking in one of these pits. An upper rim standing out of the ground, is made of wattle-work, the clay lining being carried to the top. When the oven is hot, the cakes of dough are wetted and stuck perpendicularly all over its sides, and the top is covered with cloths until the bread is baked. Now mark the evolution from this. If, in moving from one pasturage to another halting ground, the clay lining of the oven could be carried away in one piece, it would save a good deal of labor in making the next oven. By making the lining as a large jar or amphora, this was done; and the common oven of Western Asia is simply an amphora of six or seven feet high, let half way into the ground, and filled from the



top in the way I have described. To us it is a startling thing to see an Armenian baker, or a Syrian, take a cake in his hand and swing himself over the fire in this jar, to stick it on, while his feet are kicking, acrobat-wise, in the air. And not altogether appetizing is the sight of an unwashed boy, with a dingy cloth tied to the end of a stick, dipping it in whitey-brown water, and then flapping the cakes in the pit-oven to keep them from burning: or the baker's ragged coat stretched over the orifice to keep in the steam, and loaded down with an old camel-cloth, or donkey-cloth, or other unsavory fabric, on the top of which some passing Lazarus may lie down for a nap in the warm. I made a vow never to eat of that bread,—but “necessity knows no law.”

We have only to go a few steps in the same street to find a Turkish oven. This is the Asiatic one *turned on its side*; the lower side being flattened to lay the loaves on, and a door placed at the mouth, so as to work it horizontally instead of acrobatically! The Turkish oven is that of all western nations; and any one who is familiar with the dome-shaped clay ovens used in country cottages in England will be able to trace every step of the evolution from the Tartar pit in the desert, up to Huntley and Palmer's newest patent.

Now let us return to the agricultural tools. In the Museum at Tiflis there is a plough-share which gives us a clue to another very interesting evolution; that from the iron hoe to the shovel; and from this again to the iron plough.

A little thought would show, even if we had no historic evidence of it, that the  earliest instrument of tillage is a hooked stick drawn towards the worker; for if either of us were set down in a forest to begin farming without capital of any sort—for the simplest tool is capital, as well as the handful of corn saved from last year—we should have to sow seed of some kind; and to do so

we must make a furrow. If we picked up a stick and pushed it, we should find it harder than if we dragged it towards us; and a hooked stick is easier to drag than a straight one. A shovel, be it noted, is a pushing tool; a hoe is a pulling tool; and therefore a hoe was used earlier than a shovel. A rake is nothing but a multiple hoe; also used before shovels; though it must have been considered a dangerous innovation. Now for the historical confirmation of this.

The oldest tools, after flint implements, that have yet been found in the world, are some that were unearthed by Flinders Petrie in Egypt, in 1890. They were in the ruins of a town that was erected for the workmen who were to build the pyramid of Illahun, during the 18th dynasty—*i. e.*, 2,700 years B. C.—say a thousand years before Joseph was Viceroy in Egypt; or eight centuries earlier than Abraham.<sup>1</sup>

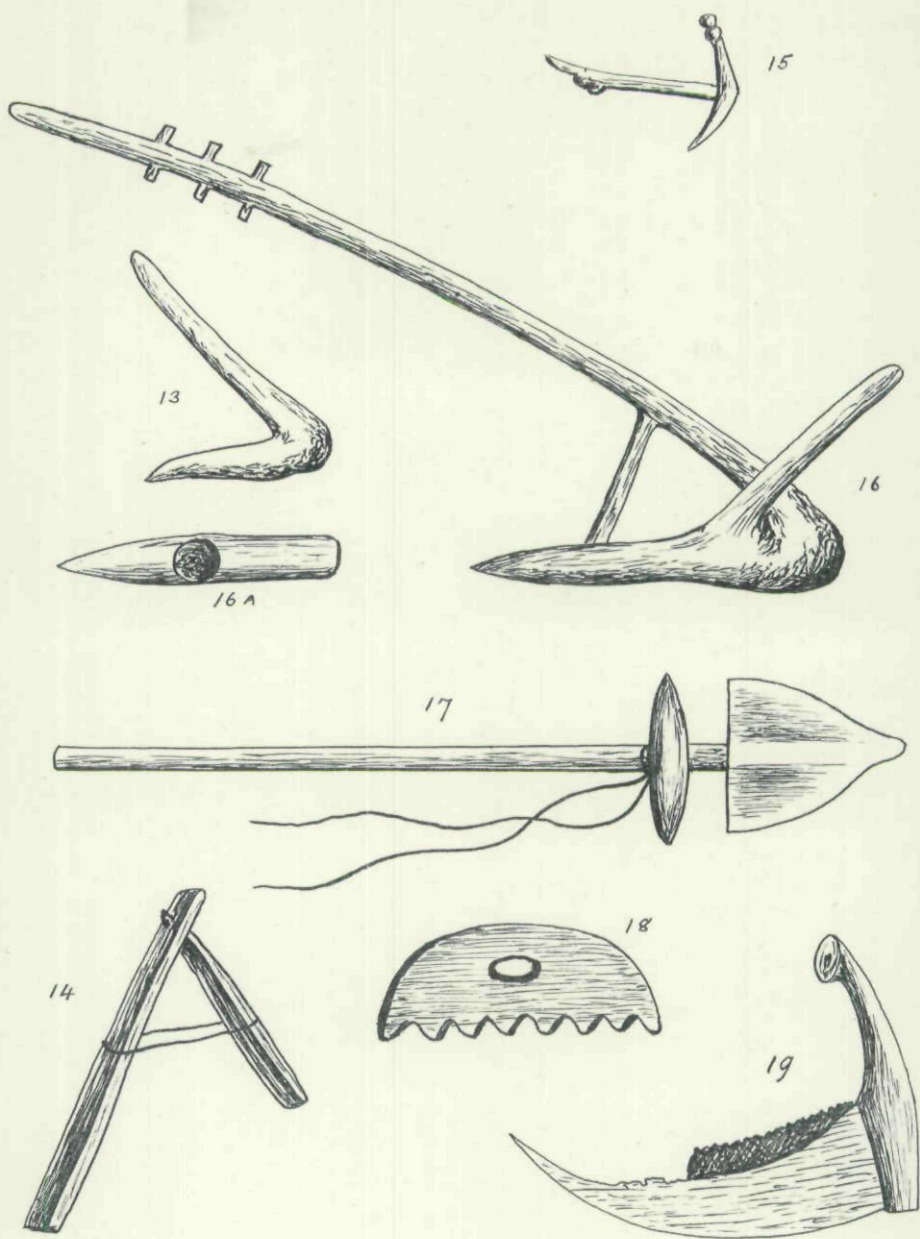
In the illustration of some of the objects turned up, we have flint implements, wooden sickles set with flint teeth; and two hoes, of which the first is a natural fork of a tree, while the second is an improved form, with a broader edge made by setting a board at an angle with the handle, similar to the angle of the natural or branch hoe [Fig. 14]. This is nearly the pattern of the mamooty, or hoe, used all over the south of India at the present day, of which a sketch was lately given me by my friend Col. Carleton.

Now let us compare this hoe No. 13 with the wooden plough still used in Mysia, as figured by Sir C. Fellows, and in Syria; and we see at once that this original plough is simply a contrivance for making horses or oxen, instead of men, drag the hoe. We must bear in mind that iron was not in common use, so far as we can gather from Egyptian remains, until about 800 B. C.—or nearly 2,000 years later

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<sup>1</sup> A useful mnemonic in Egyptian dates is that the Exodus of the Israelites took place as far before Christ as Columbus's discovery of America is after; *i. e.*, about 1,490 years. Bronze came into general use about the time of the Exodus.





- 13 Natural Hoe from Illahun  
 14 Broad Hoe Ditto  
 15 Wooden Plough from an ancient ooin  
 16 " Mysis  
 16a Iron Share or point for Ditto  
 17 Shovel used in Palestine  
 18 Wooden Rake, Illahun  
 19 " Sickle, with flint teeth, Ditto

than the wooden hoe found at Illahun. Copper *was* known: for a workman's frail was found, with copper tools, at the same time as the wooden implements.

After the discovery of iron it not only replaced wood, but led to improved patterns of tools; and the hoe took, in Western Asia, the form of a triangle (like the shovel, Fig. 2), this is the Syrian pattern. By setting back the socket of the hoe, at a different angle, a new digging tool could be made—and this is the evolution of the iron shovel such as I had forged at Tiflis.

An amusing instance of the way in which the Asiatic people cling to old ideas, even in the use of a newer instrument, was given me by a friend who has been a good deal in Lebanon. The Friends have a school there, at Brumana, near Beyrout; and Henry Newman, with Eli Jones of Maine, were visiting it. They noticed the smallness of the shovels, and to improve the agriculture, they sent to England for spades of larger size. A few days after the arrival of these, Henry Newman was taken aback at the way the Syrians worked them. A man drove the spade into the earth; then stood still, and called "Hi!" on which to young fellows, each with a rope fixed to the neck of the tool, dragged it up, lifting the mould, ready for the next dig! But this is the universal plan in Palestine. [See fig. 17 which is taken from the Journal of the Palestine Exploration Fund, "April," 1890].

As the first wooden plough, then, was the wooden hoe dragged by an animal, so the first iron plough was a shovel dragged by a horse, or oxen, instead of by a man. In proof of this may be instanced a plough-share from Daghestan, in the museum at Tiflis, which is exactly like my Caucasian shovel, except that the socket alters its pitch; and three plough-shares from Syria, all lent me by friends who obtained them in the country. The first is a model only, but precisely matching my shovel; the second and third are actual implements taken from field-work. But these



two plough-shares from Palestine have a curious spike forged in front of each; and the rudiments of the same projecting point are visible on the Syrian hoe and the Syrian shovel pictured in the Quarterly Statement already cited. What is this? Evidently it is nothing more or less than the imitation, by the maker of the first iron plough—the *slavish imitation of the pointed stick of the wooden plough that went before it*, and that remained, and is still used in Asia, along with it. It is in fact a survival, which the more revolutionary blacksmiths of the Caucasus rightly discarded, as unavoidable in wood, but needless in metal.

In conclusion: In what way can we account for the identity which we have shown to exist between the mining tools used in Germany and Cornwall, and the Caucasus, and between the hoe and shovel of the Caucasus, with the like tools of Palestine?

They must have come, originally, from one centre; and in endeavoring to trace where this was, we instinctively turn in the first place to the sources of two of the great civilizations of the East—Egypt and Assyria. But I am assured by the authorities of the British Museum that hitherto we have no evidence of the shovel having been used either by the Egyptians or the Assyrians. In representations of brick-making on Egyptian Monuments we find the broad hoe used for working the clay, similar to the broad one a Illahun, much as the mamooty is used in India, and the hoe at Rio Tinto, instead of the shovel.

On the other hand, we not only find that both the hoe and the pointed shovel are now employed in Syria; but the later was used anciently in countries like Italy, that came strongly under Phœnician influence.

The pointed shovel with the Syrian crossbar is still met with in Italy, and appears on an ancient tomb in Rome,<sup>1</sup> and is used to-day (though without the foot-bar), as well

<sup>1</sup>It may occur to some readers that the "spades" on playing cards are of this triangular shape; but I believe the cards themselves were introduced into Europe from the East.

as the pick, in Germany and Cornwall, where Syrian influence affected the mines.

I cannot find the same shovel at the Rio Tinto mines, which are near the Phœnician colony of Gades (Cadiz), but Captain Rich, the manager there, has favored me with an ancient pick found in the workings [Fig. 6], which corresponds in form to the one I brought from Tiflis, and to some ancient Cornish ones in the Truro Museum.<sup>1</sup>

That the Syrian pattern of the triangular hoe and shovel is the *oldest* is proved by the survival, in them, of the spike imitating the preceding wooden hoe.

I therefore think Syria the original centre from which these implements came.

The Phœnician commerce will account for their being met with in Italy; and Phœnician mining explains their use in Germany, France and Cornwall. I believe the Hebrew migration under Shalmanezzer to Armenia and Aderbijan, and the exile of Phœnicians under the Assyrians, will account for the presence in the Transcaucasus of these Syrian tools, and the Syrian chant-music, as well as perhaps of the Syrian oven.

In ancient times not only were the Phœnicians the best artisans in the world in metals, but both they and their near kinsmen, the Jews, took the lead in jewelry, and gold and silversmiths' work: as the Jews do at the present day. Thus at Tell Defenneh (the Tahapanes of the Bible, or Daphne of the classic writers), the border town of Palestine and Egypt, Flinders Petrie records the discovery of goldsmiths' and jewellers' work on a considerable scale.

Similarly at the present day these arts in the Caucasus

<sup>1</sup> Suspecting that the cloths made by the peasantry in so Phœnician a district might still show some similarity to Western Asian fabrics, I asked Captain Rich whether certain striped patterns are used near Rio Tinto. He has sent me several interesting specimens of native cloths: one of them from a bolt that has been made in the same family for one hundred and fifty years. Some of these are almost identical with the woollen cloths woven and dyed by the Armenians among whom I travelled. But this is too wide a subject for the present paper.



and Northern Persia are mainly followed by the Armenians. Homer says that the very finest silver-work in the world was wrought by the Sidonians: and the finest needlework and embroidery. At this moment some of the most beautiful silversmiths' work in the world is in the Armenian bazaars in Tiflis and Northern Persia, and the finest work of the needle and the loom is found in the same district.

I have by me several photograph portraits of Armenians, some of them strongly Hebrew in features, from the former Persian city of Gangi; the border country of the Medes, to which the exiles were banished by Shalmanezer. I do not dogmatize on these facts — but simply lay before the reader, for what they are worth, my own impressions on them; which are briefly these:—

1. We know that the Israelite tribes and some of their kinsmen, the Phœnicians, settled in the districts now occupied by the Armenians: and we have no historic reason for supposing that they have since migrated to any other part of the world.

2. We find among the Armenians old national Israelitish airs in music; old Syrian tools: the same oven that is used in Palestine: the same aptitude for fine metal-work and jewelry which distinguished the Jews and Phœnicians: the same ability in textile manufacture (as displayed in "Persian" and "Turkey" carpets, silk-work and shawls): the same talent for commerce<sup>1</sup>: abstinence from eating pork: the employment in a non-semitic language, of several Hebrew words; and the very general and very striking Hebrew type of features. It seems to me more likely, then, that the present Armenians are descendants of the Israelite exiles, than that the latter are "lost." In any case, as we turn from this most interesting country and people, we shall feel the force of the Frenchman's words:—

"Nothing begins, but all things go on."

<sup>1</sup> The Russians assert that "it takes three Jews to outwit an Armenian."

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