

## **THE CEDARS OF LEBANON**

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### **Introduction**

A short while ago, I came upon an article pertaining to the famed cedar trees of Lebanon. This captured my attention not only because I am a member of the Craft and had heard the reference in the ritual to Solomon's request to Hiram, King of Tyre, for cedar to adorn his magnificent temple, but also because I was working for the Ministry of Forests at that time. So I thought I might share some interesting observations about these ancient trees with you.

We read in the VOSL:

(I Kings 5, v.6-14) He requested Hiram to hew cedar trees out of Lebanon. Hiram rejoiced and replied, saying he would do all Solomon's desire, that he would send both fir and cedar by rafts by sea unto the appointed place. In return for which Solomon is to give Hiram 20,000 measures of wheat and 20 measures of pure oil, the arrangement continuing year by year. Solomon raised a levy of 30,000 men and sent them to Lebanon; 10,000 a month by courses. A month they were in Lebanon and two months they were at home.

(II Chronicles 2, v.4-10) Solomon sent to Hiram, the King of Tyre saying he was building an house for the name of the Lord his God. He asked for cedar trees, fir trees, and algum trees (juniper) out of Lebanon, "for I know that thy servants can skill to cut timber, my servants shall be with thy servants." Solomon offered wheat, barley, wine and oil.

And in our Masonic ritual

At the building of King Solomon's Temple there was heard not the sound of axe, hammer or any tool of iron. It was possible to construct a building of such stupendous magnitude without the aid of iron tools, because the stones were all hewn, squared and numbered in the quarries where they were raised, the timbers were felled and prepared in the forests of Lebanon and carried by sea in floats to Joppa and then by land to Jerusalem, where they were set up by wooden mauls prepared for that purpose.

### **The Levant**

Of all the Arab lands between Morocco and Iraq, Lebanon is the only one with no desert. Lebanon, together with Syria and Palestine, is part of the Levant, a territory lying on the eastern end of the Mediterranean Ocean. The country is divided by the Lebanon mountains, which run along the coast north and south of Beirut.

For the most part, the coast is abrupt and rocky with no deep estuary or gulf, with the result that hardly a natural harbour exists on the Lebanon shore. This is the more surprising considering the fact that its ancient inhabitants, the Phoenicians, were the finest sailors in antiquity.

The western range is the Lebanon. The word Lebanon is derived from a Semitic word meaning "as white as milk" and refers to its snow-capped peaks which look white for about six months of the year, rather than to the limestone rock forming its upper layer.

The Lebanon has a length of about 105 miles and varies from 6 to 35 miles in width. The highest peak is 11,024 feet above sea level, and its close neighbour in whose lap the largest surviving grove of cedar trees nestle is 10,018 feet above sea level.

In the Tertiary period of the Earth's history, extensive earth movements took place, resulting in the birth of the Lebanon. Geologically, the Lebanon is comparatively young and therefore steep and craggy. The rugged terrain is marked by high valleys, cliffs and ravines

During the autumn and winter months, moisture-bearing air from the Mediterranean Ocean rises and unloads its moisture over the mountains, giving Lebanon an annual rainfall of 33 inches in less than 6 months.

On the top 1,000 feet of the Levant grow cypress, cedar and fir. The most renowned and magnificent among the Lebanese trees is the cedar (*Cedrus libani*). Although the cedar of Lebanon does not aspire to half the height of *sequoia gigantea*, the California redwood, it is the greatest of all trees in Biblical lands. This majestic tree attains a height of 120 feet with a girth of 40 feet. It is found in sacred writings and is a symbol of strength. Indeed the word 'cedar' is from the Arabic *Kedra* meaning strength. Cedar provided the early Lebanese with the finest timber with which to construct their seafaring ships. Its excellence has been sung by poets, prophets and historians. References abound to its strength, durability, majesty and suitability for carving and stateliness.

### **The History of the Phoenicians**

The mountain impresses its rugged character among its people. The Lebanon, especially through its valleys and hills, tends to divide its inhabitants. City states were the rule in Phoenicia.

The Phoenicians were the early settlers along Lebanon's coast. Their origin remains a mystery. They called themselves Canaanites, but the Greeks dubbed them Phoenicians after the purple dye they sold from the port of Tyre. Herodotus, that diligent chronicler of the ancient world, claimed they migrated from the Persian Gulf and settled in the Levant around 2800 B.C. Wherever they came from, the shrewd ambitious Phoenicians claimed a narrow coastal strip of the Levant between the sea and the mountains and set out to become history's slickest sales-people. Pharaoh Snefru (c.2650 B.C.) records a voyage by sea to Lebanon from whence he brought 40 ship-loads of cedar logs. He also reports ship building of cedar wood. Well preserved cedar beams have been found in Snefru's burial chamber. In 1954, a sixty-foot cedar bark of Khufu

(Cheops), successor to Snefru, was found hermetically sealed in the limestone by the great pyramid at Gizeh. Constructed of Cedar, the boat was intended to carry the soul of the Pharaoh on its eternal journey with the sun. This is the second oldest relic of the cedar of Lebanon thus far found. The Egyptian Museum at Cairo exhibits a number of cedar sarcophagi.

The Lebanese seaport could provide timberless Egypt with unexcelled wood for building ships, roofing palaces and temples, and manufacturing dishes, coffins, flagstaves for temple use, chairs and other choice pieces of furniture, but also white gum which oozed from the trunks and branches of coniferous trees and was used in mummification.

By 1400 B.C. the Phoenicians held a monopoly on the cedar forests that covered the mountains behind the port of Byblos. Thus, emissaries of Egypt's great pharaohs trekked north to buy wood to embellish their grand public buildings, and oil and resin to preserve their dead. In time, every Egyptian death meant money in a Phoenician pocket.

The Phoenicians were manufacturers of glass and metal objects, but their real wealth came from carrying the cargoes of others. Cedar provided them with the finest timber with which to construct their sea-going ships. Their square-rigged triremes (sailing vessels with three banks of oars) were larger, faster and easier to handle than any other ships in existence, and on these the Phoenicians built their fleet. Sailing up the Nile, the Phoenicians loaded the products of Egypt from the busy wharves of Thebes and set sail for the ports of the ancient world. By 1100 B.C. they controlled the commercial sea lanes and positioned their trade routes which eventually would reach from the Black Sea to Spain. For almost three centuries (roughly 1200 -900 BC.) the Phoenicians enjoyed comparative peace and practiced full independence.

Four major articles lacking in several Mediterranean lands were supplied by the Phoenicians;-timber, wheat, oil and wine. Not all were entirely their own products. Palestine provided wheat and oil, which Solomon traded for cedar. In addition to timber, the forests of Lebanon provided pitch and resin for coating and preserving ships.

The city of Tyre is thought to have been founded 240 years before the building of King Solomon's Temple. It rose in the shadow of a promontory and was protected by an insular rock about a mile in width and 3/4 of a mile in length. The island afforded protection for the ships in time of peace and for the inhabitants in the time of war. It was provided with two distinct harbours, one opening to the north and one to the south. With the increase in wealth and the danger of invasion, the island was no longer a storehouse for merchandise or a place for retreat but became the city itself.

By the early 10th century BC, Tyre stood at the head of a powerful state. Best known of the Tyrian monarchs was Hiram I (Ahiram, 969-939 BC) son of Abibaal and friend and ally of Solomon. Under Hiram I, the city reached its height. It is thought that its massive walls which made it one of the strongest ports in the eastern Mediterranean were erected during his reign. Yet by the late 9th century, when the Assyrians had established their superiority over the coast, Tyre's great days of glory had gone.

The Canaanites (Phoenicians) were unexcelled as metallurgists. Copper and its alloy bronze were freely worked and with a high degree of effectiveness. Chemical analysis of the blade of an early 14th century axe found in Ra's al-Shamrah revealed not only knowledge of smelting iron but of mixing it with other metals to form alloy steel. Iron, developed by the Hittites and Philistines, was a jealousy guarded secret but the Phoenicians broke the monopoly and learned the use of iron in shipbuilding and chariot making.

### **Solomon's Temple and Palace**

For specimens of Phoenician monumental structure, we have to look outside of Lebanon. The best known among such specimens is the Temple of Solomon (963-923 BC). Originally designed as a royal chapel, an appendage to the palace, the Temple took seven years to build, eventually becoming the national palace of Judaea and Jewish but not North Israelite worship. The architects and builders were Tyrians using the cedar of Lebanon. To this end, 30,000 of Solomon's subjects were levies to work in relays, one month in Lebanon with Hiram's men and two months at home engaged in their usual pursuits. The cut timber was carried to the sea, transported in rafts to Joppa, and then conveyed to Jerusalem. In exchange, Hiram received wheat, barley, pure oil and wine. The limestone was cut with saws so that never the blow of the hammer could be heard. Complicated objects were cast from bronze. The two pillars that stood at the entrance to the porch of King Solomon's Temple recall the two pillars seen by Herodotus in Melkarth's temple at Tyre. The decoration of the temple was inspired by contemporary Canaanite motifs. Its ritual and practices reflect Canaanite practice. The temple slaves were Canaanites. Even the designation 'hekal' was borrowed from the Canaanite vocabulary.

Solomon's palace was likewise built by Phoenician architects, using cedar from Lebanon. So rich in cedar columns was the royal quarter that it became known as the "House of the Forest of Lebanon". The same wood provided Solomon with his chariot. The great aggregation of stables unearthed at Megiddo and ascribed to Solomon were also of Phoenician workmanship. Hiram's men built Solomon's fleet, the first in Hebrew history.

### **The Quest for Cedar**

The gradual destruction of the forest has been a necessary consequence of the dense population of Lebanon. Great too, must have been the demands made on these forests in Biblical times, for these cedars of Lebanon were sought for the construction of palaces, temples, courts of administration and for other buildings as well as for shipbuilding, masts, images, chests, musical instruments and coffins. The secretions of the cedars of Lebanon are not abundant but appear to possess remarkable properties, some of which were known in ancient times. The Egyptians are said to have used its whitish resin in embalming their dead, and Pliny states that sometimes books were perfumed with it.

Cedar was considered "incorruptible", it was capable of taking a fine polish, it was fragrant and long lasting. No wonder there was a sustained demand for it through the ages.

David and Solomon both made trade agreements with the King of Tyre (2 Samuel v.11, 1 Kings v. 8) whereby choice cedar was hewn and floated down the Mediterranean coast to Joppa and hauled upland 25 miles to Jerusalem for the royal house of David and into the palace and "House of the Forest of Lebanon" of Solomon (1 Kings 7:2).

Cedar was used for the Temple beams, ceiling, support for chambers, wall lining, court beams and altar (1 Kings 6:9-20, 36) Of the interior of this monument sanctuary, it was written "..all was cedar, there was no stone seen." (1 Kings 6:18) "He lined the walls of the house on the inside with boards of cedar, from the floor of the house to the rafters of the ceiling, he covered them on the inside with wood; and he covered the floor of the house with boards of fir ". (1 Kings 6:15)

Solomon agreed to provide Hiram with 125,000 bushels of wheat and more than a million gallons of olive oil annually. For some years, things went well. But there was a debt to be paid. After 20 years, Solomon was forced to cede 20 cities north of Mt. Carmel and much of the land in the plain of Acco (south of Tyre) to Hiram in repayment of debts. Solomon's insatiable need for revenue to pay for his massive construction program and his expensive lifestyle led him to divide the northern tribes into 12 tax districts.

### **Solomon's Assault on the Forests**

Solomon's army of tree fallers must have made considerable inroads. The total number of workers employed on the temple is given as 183,000 men, 30,000 of whom were Jews, 1/3 of whom worked in the forests of Lebanon for a month and then two months at the temple. The transport section employed 70,000 Canaanites. Skilled labour, wood-workers, masons and stone cutters number 80,000. Adoniron, the General Superintendent, had 3,600 foremen to supervise the workers. The construction of the Temple took 7 1/2 years, (1 Kings 6: 37,38) and that of his own house 13 years (1 Kings 7:1) In addition, he also built the House of the Forest of Lebanon (1 Kings 6:2).

How these ancient woodsmen felled and transported the cedars from the mountains of Lebanon is not revealed in any literature I have studied to date. It is known that the laborers possessed iron axes and saws. There is mention made in Hitti's book, "Lebanon in History," of a team of 300 men and 300 oxen felling the logs and delivering them to Tyre. Another suggestion is hinted in this passage from Richard St. Barbe Baker's 'Famous Trees of Bible Lands (p.83) "one of the ravines whose sides were clad with cedar is many miles long, and opens upon the sea at the port of Jebeil, the ancient Gebal. The ruins and walls of Gebal attest to its importance in ancient times Ezekiel speaks of its inhabitants as shipbuilders, at least as preeminent caulkers; and from 1 Kings v:18 we learn that they were celebrated as the most renowned artificers and were employed by Hiram in preparing the materials for the Temple. Probably they cut their cedars from this very valley, which would be far more accessible to them on the moraines many miles inland, and on snow-covered heights and then launched them at their own port."

It must be remembered too, that at the time of the building of King Solomon's Temple, these trees which today approach 40-48 feet in girth (i.e. a diameter of approximately 15 feet) were probably about 18 to 24 inches in diameter when they were felled for use by King Solomon

some 2900 years ago. This observation is borne out by historical sketches, paintings and drawings.

The army of workers must have needed a vast amount of raw material to keep them going over the twenty years or more they were employed on Solomon's buildings. Let us suppose that only half of them used the timber from Lebanon, say 90,000 of them, and that they worked 10 hours a day for only half of each year. That would mean that 9,000,000 sun hours were spent on the work of felling and transporting timber. No wonder that the forests vanished, for with all his wisdom, Solomon did not suggest to Hiram that he should run his forests on a sustained yield basis, neither is there any record of amends being made by way of reforestation, unless it be in Ecclesiastes II, 4-6 where the writer, speaking in the person of that monarch to whom the forests of Lebanon paid so heavy a toll, declares that after considering ..... what it was good for the sons of men that they should do under the heaven," the first things to which he set his hand were building and planting. "I made me great works, I builded me houses, I planted me vineyards, I made my gardens and parks, and I planted trees therefrom the forest where trees are reared."

It is perhaps the last phrase of this description of a comprehensive scheme that immediately concerns us: and one would like to believe that they embody a Solomonic tradition, though the book in which the words occur (Ecclesiastes) is generally accounted pseudonymous and comparatively late.

### **The Remaining Cedars**

Travelers have for many generations been disappointed with the surviving relics of the cedar forest which looms so large and poses so magnificently in the Old Testament, but of which the Old Testament itself records the early exploitation on a vast scale.

In Biblical times, the mountains of Lebanon were covered with great forests of cedars. These cedar forests were regarded with sacred awe. They possessed a power and a majesty, a unique form of grandeur and beauty, of strength and permanence, as trees of Jehovah painted by his right hand, crowning the great mountains. masterpieces in lofty stature, wide spreading shade, perpetual verdure, refreshing perfume and unfailing fruitfulness. Some of the finest imagery in the Old Testament is drawn from this source.

Today, less than a dozen comparatively small groves of cedar are growing in Lebanon. Those that remain are weather worn, hoary and angular in appearance, with short, many-branched main stems, the largest tree being 48 feet in girth, 11 feet mean diameter and about 80 feet high.

Most of the remaining cedars grow at the head of the Kedisha valley, 15 miles in a straight line from the sea. The Kedisha valley, at 6,000 feet elevation, terminates in broad, flat, shallow basins, two or three miles across and as much long. It is three or four miles south of the summit of Lebanon, which is about 12,200 feet in height. The cedars grow only in a portion of the moraine which borders on a stream. They form one grove about 400 yards in diameter, and appear as a black speck in the great area of the corrie and its moraines, which contain no

other arboreous vegetation, nor any other shrub but a few barberry and rose bushes. The number of trees is about 400, and they are disposed in nine groups corresponding with as many hummocks of the range of moraines. They are of various dimensions, from 18 inches to upwards of 40 feet in girth, but the most remarkable and significant fact connected with their size and consequently with the age of the grove is that there is no tree of less than 18 inches in girth and that no young trees, seedlings, or even bushes of a second year's growth are to be found. Calculating from the rings in a branch of one of the older trees, the younger trees would average about 100 years old and the oldest 2500 years, both estimates no doubt being widely from the mark.

It is interesting to check the reports of travelers who have seen and counted these ancient and timeless sentinels. In the year 1500 AD, 28 of the Biblical trees were counted. Twenty four were seen in 1575, 23 in 1600. The count had decreased to 16 in 1738, 11 in 1810, and only 7 in 1818 that were thought to date to the biblical era of Solomon. Eliot Warburton in 1845 maintained that at the time of his visit to the region, there were 12 of the old trees remaining, the largest 45 feet in circumference, the second 44 feet. Many are scarred with traveler's names. The roots of some of these cedars are almost destroyed by shepherds who have made fires there, and holes wherein they sleep, yet nevertheless the cedars flourish green above on the tips and branches.

#### **The State of the Forests of Lebanon Today**

There was a time when Lebanon was thickly covered by forests, almost all of which have been cut for fuel, building and other purposes. Hence the modern name 'Jurud' (stripped, barren) for the high regions.

In Biblical times the cedars of Lebanon must have been a far more conspicuous feature than they are today. Surely a few scattered groups of trees in almost inaccessible recesses would not have inspired that glorious and majestic imagery of the prophets. They spoke to men to whom the splendour of those forests were familiar. The cedars of Lebanon are mentioned no fewer than 70 times in Biblical passages. In the cedars of the famous grove we have living evidence handed down to us that that imagery was no exaggeration. The scattered groups traced in other parts of the Lebanon Range are also living evidence that the range of cedar was widespread and therefore that the illustrations drawn from it were familiar and forcible.

As mentioned previously, moisture bearing air from the Mediterranean Ocean in the autumn and winter months rises and unloads its moisture over the mountains, giving Lebanon almost three feet of precipitation in less than six months. Rainwater sweeps down the slopes. The onrush of water with its concomitant process of erosion and denudation, has through the ages resulted in rendering barren tracts of land which were once productive. Ruthless cutting of trees and unrestricted grazing, particularly by goats, have also contributed their share to the loss of surface soil. The dire consequences of the wholesale destruction of the forests of Lebanon may be seen in the denuded hills, where the green mantle of the forest has been torn away and generations of goats have prevented the return of the protecting cedars.

Although millions of cedar, lime and spruce seeds have been sown in

Lebanon from U.S. Army planes in co-operation with the Near-East Foundation and the Lebanese government, so far there is little to see for these efforts, and today as in the day of the first English botanists, the chief colony of ancient cedars, of which some 400 remain, are near Bsharri at the head of the deep Quadisha Valley in the Republic of Lebanon, about 100 miles north of Beirut and 75 miles northeast of Byblos, or Gebal. They bear the marks of antiquity, with their reddish brown bark frosted with white. The largest of the trunks' girth is 40 feet and they have an umbrage of from 200 to 300 feet. This is the chiefly visited grove, just below the highest peak of the range at a height of about 6,000 feet above the Mediterranean.

These trees are now jealously preserved, and a charge is made for entering the area. Some of the trees are said to be more than 2,000 years old and of immense girth. The wood is very hard, because growth near the snow line is very slow. The Marionites, a sect of the Roman Catholic Church, have erected a small chapel in the grove, and a Marionite father guards these few remaining 'trees of the Lord.'

Sadly, the trees are now faced with a silvicultural problem. Precariously clumped together on a small hillside, surrounded by bleak, denuded and arid mountains, they cover too small an area to maintain the micro-climate essential for their survival. This diminutive area in a vast expanse of bare mountains, once covered with cedars in company with ilex (holly) and cupressus is currently endangered and must be supported and expanded with enlightened planting. The entire area should be protected from goats and the little nurseries in the nearby village enlarged to include helpful indigenous species of nurse trees.

The author of the book from which I first began to develop this paper, Richard St. Barbe Baker, relates his feelings as he surveys the remaining grove of the Biblical Cedars of Lebanon. "I drove high over the mountains, just as the sun was rising, and looked down thousands of feet at the pathetic little patch of cedars, a mere spot of dark green in a parched and naked landscape. I wondered then if it could be in the mind of wealthy Jewry to compensate Lebanon by restoring her tree cover, the destruction of which was started by Solomon some 3,000 years ago.

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#### **Author's Note**

For the sake of conservation of space and ease of reading I have not footnoted all of the statements made in this paper in accordance with established practice. The principal sources of information for this paper are The Holy Bible, Famous Trees of Bible Lands and Atlas of the Bible, supplemented by technical reference material from the B.C. Ministry of Forests.

#### **Supplementary Note**

Following the presentation of this paper to the Victoria Lodge of Education and Research, questions were raised concerning the strength and utility of cedar as a construction material for King Solomon's Temple. These questions were put to me by brethren who were thinking in terms of our local Western red cedar and yellow cedar. In fact, neither



of these two west coast trees are cedar trees. There are only four true cedars in the world: the cedar of Lebanon (*Cedrus libani*), the Atlas cedar (*Cedrus atlantica*), native to the mountains of North Africa; *Cedrus brevifolia*, which grows only in Cyprus; and the Deodar cedar (*Cedrus deodara*), found in the Himalayas. Our native 'yellow cedar' is actually a member of the cypress family (*Chalnaecyparis nootkotensis*), a very slow growing tree. Likewise, the western red cedar is not a member of the cedar (*Cedrus*) genus at all, but rather *Thuja plicata*. Its wood is very light, soft and straight grained. Unlike the true cedar, the western red cedar has relatively low strength and is not suitable for building applications where it is necessary to support heavy loads.

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